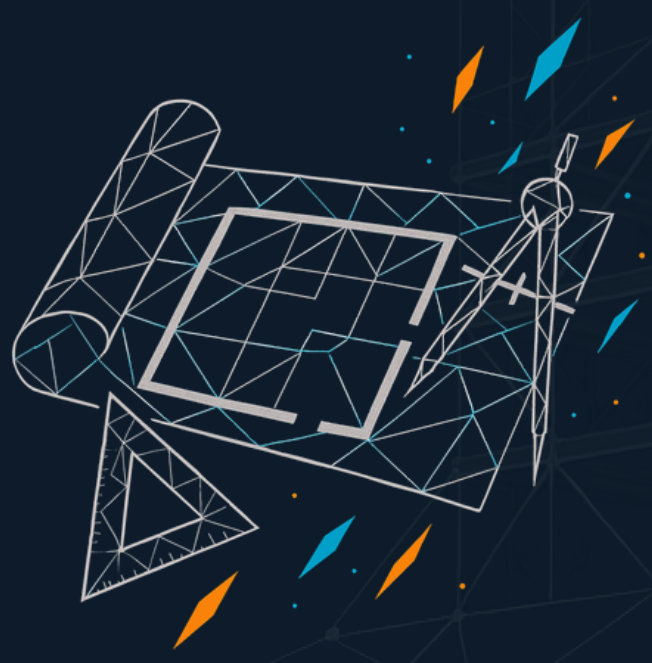
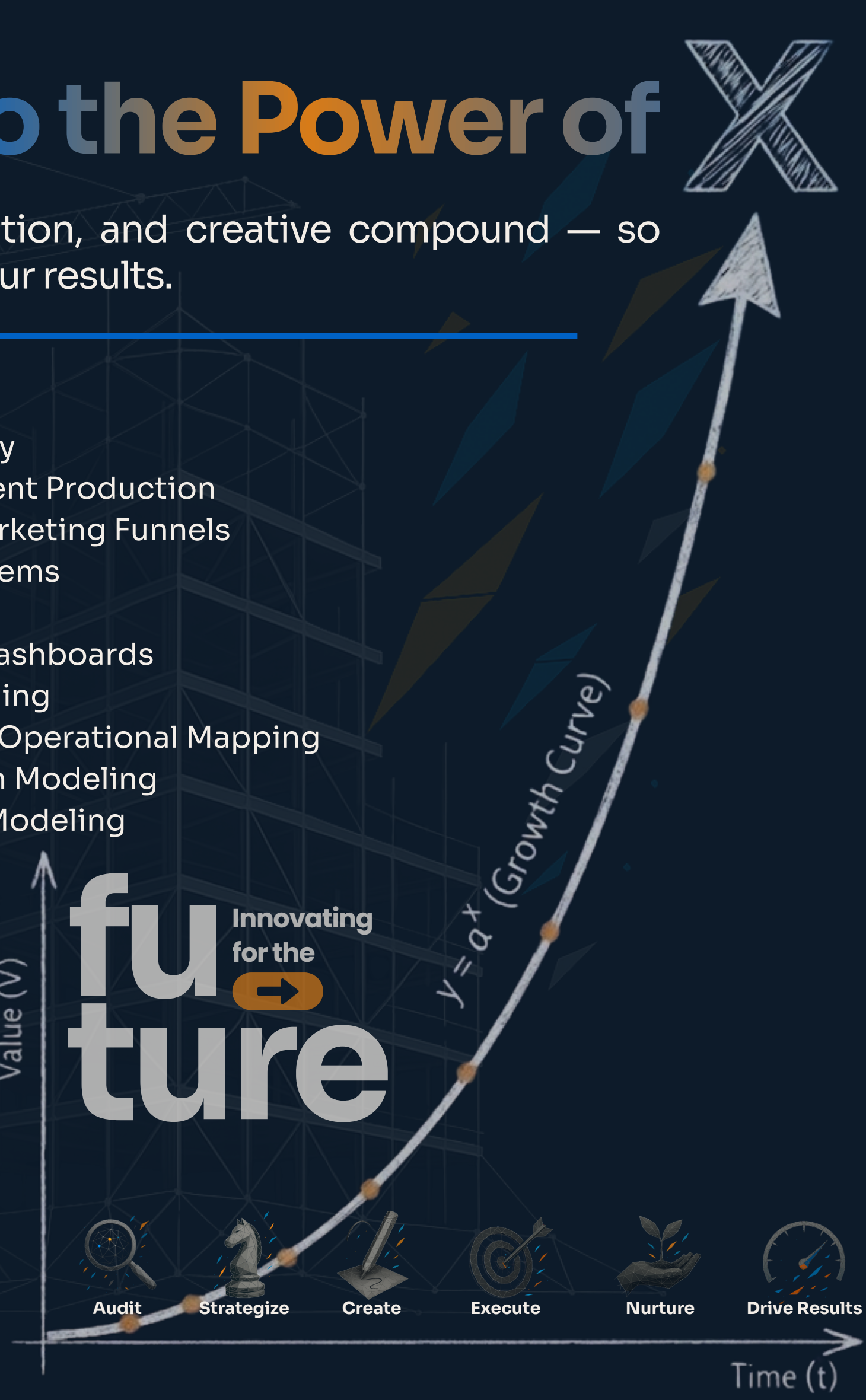
# Growth to the Power of X

Where strategy, automation, and creative compound — so every move multiplies your results.

## Our Services

- Brand Strategy and Identity
- Creative Design and Content Production
- Web Development and Marketing Funnels
- CRM and Automation Systems
- Performance Marketing
- Analytics and Reporting Dashboards
- Systems-Based Programming
- Process Optimization and Operational Mapping
- Data Analysis and Decision Modeling
- Product Engineering and Modeling






www.ascendyx.com

# Our Tools That Power Smart Growth

## Growth. Calibrated

- No one-size-fits-all packages
- Data-driven decision making
- Full-stack expertise
- Scalable solutions

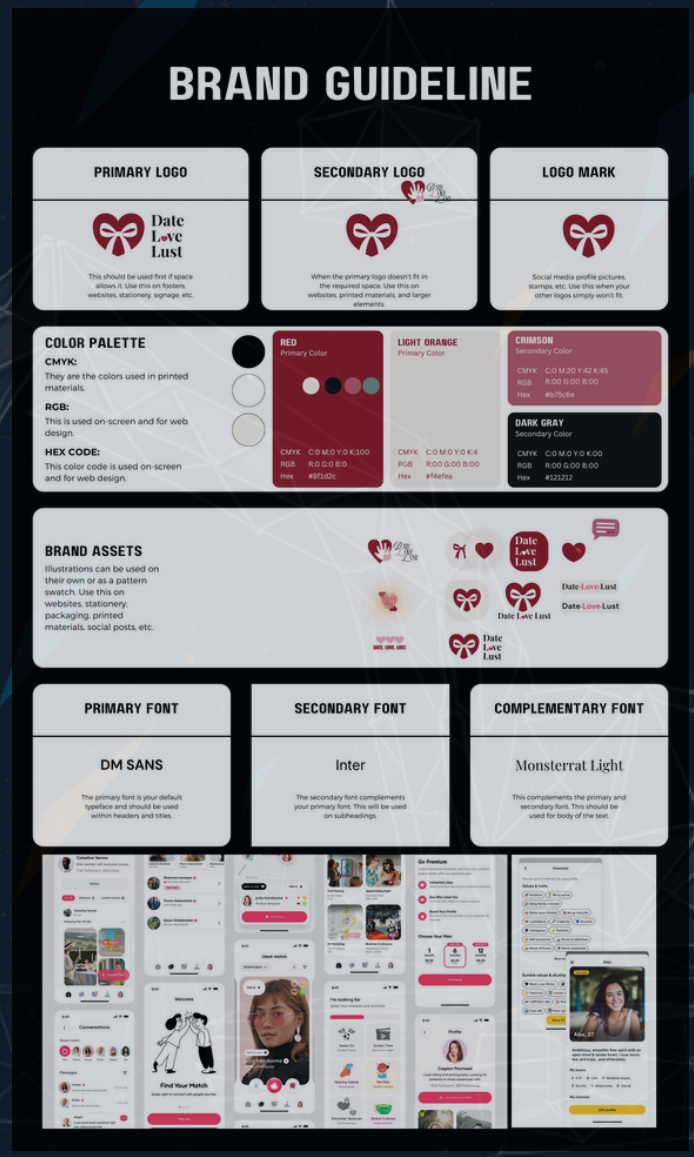
Audit · Strategize · Create · Execute · Nurture · Drive Results

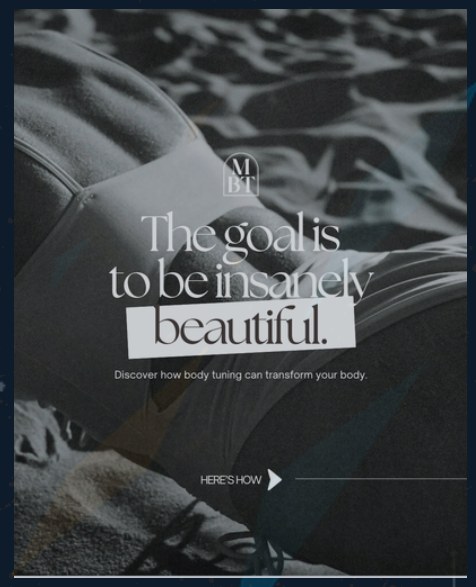
# Design Brands That Scale

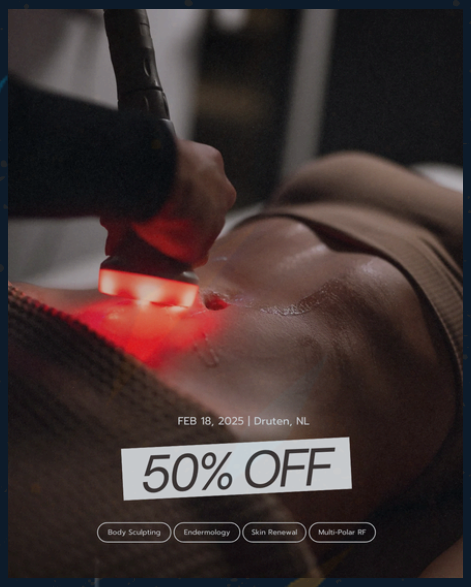
## Brand Strategy and Identity

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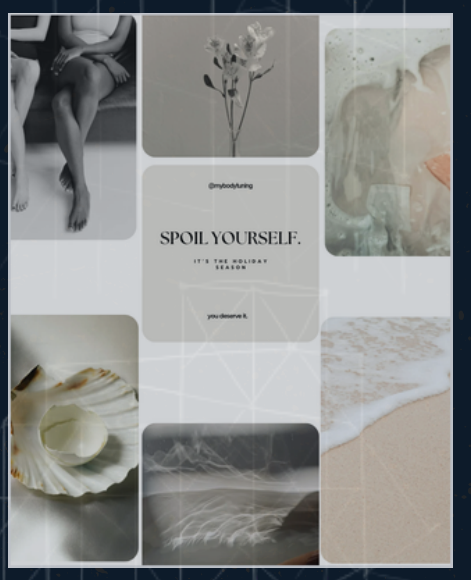








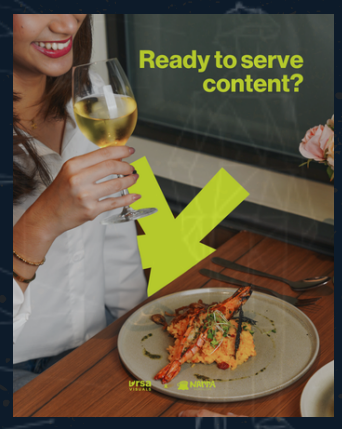






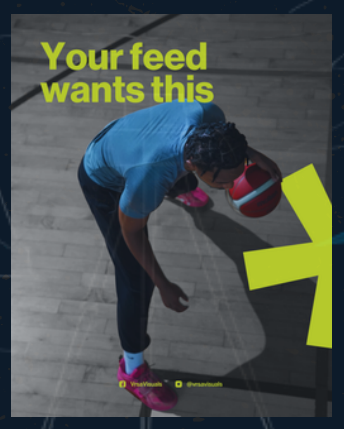




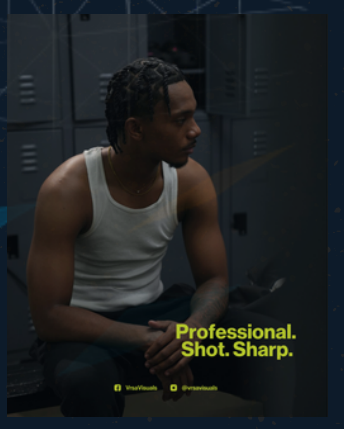













We build clear brand systems that align strategy, visuals, and messaging so your business scales with consistency and confidence.

# Create Content That Converts

## Creative Design and Content Production

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We create high-impact designs and edited videos built to capture attention and convert across platforms.

# Build Conversion-Ready Systems

Web Development (Backend and Front- end) ,Marketing Funnels, and Email Campaigns

Audit | Strategize | Create | Execute | Nurture | Drive Results





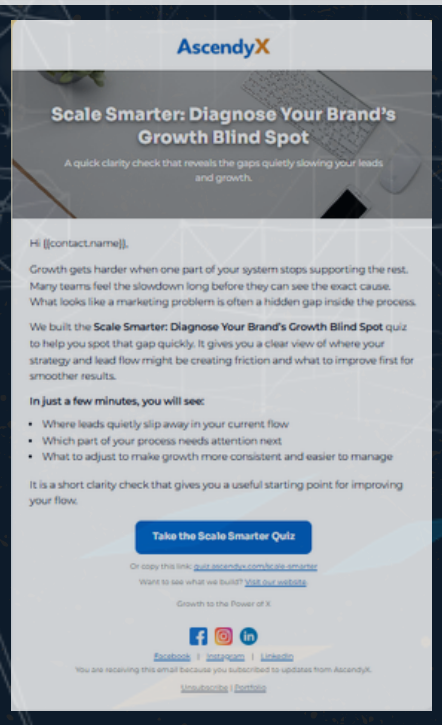


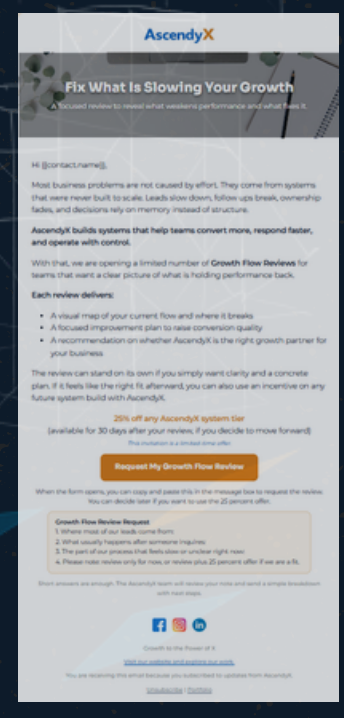








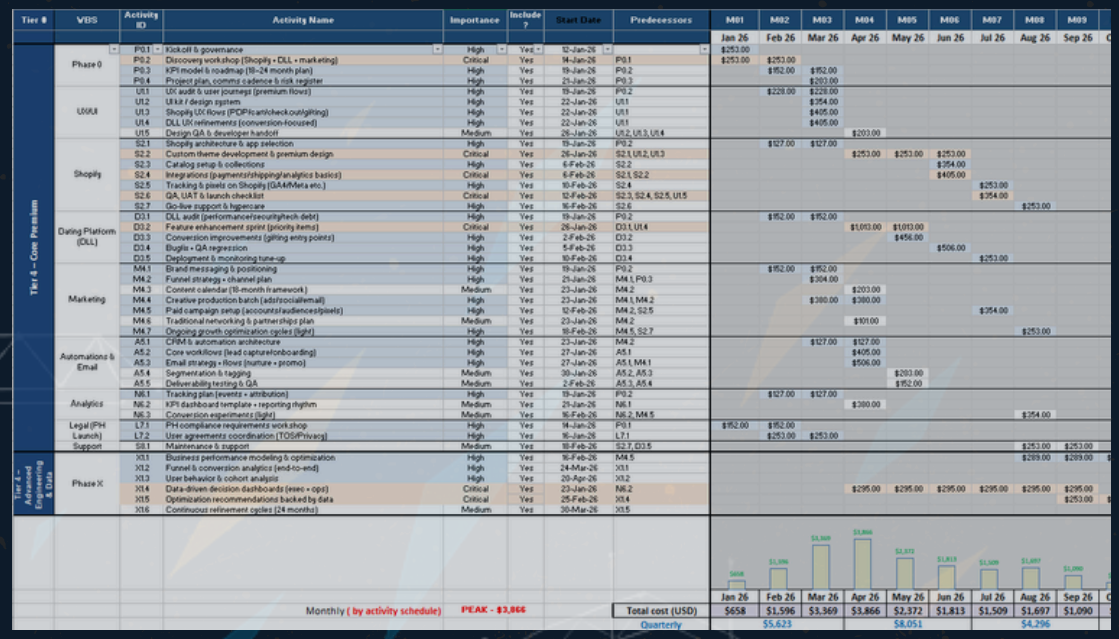

We build fast, conversion-focused websites, funnels, and email campaigns that guide users from first click to action.

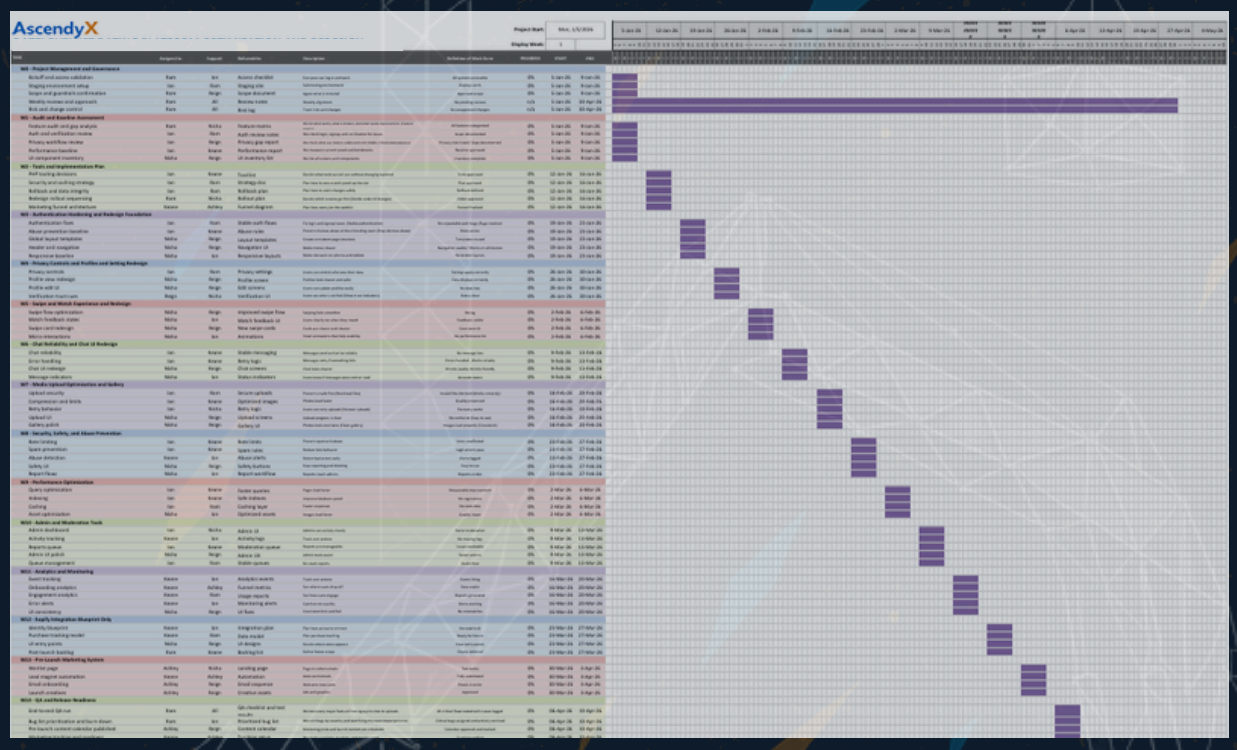
# Engineer Better Solutions

**CRM, Automations, Project Management, Lead Generation, Custom GPTs, and Chatbots**

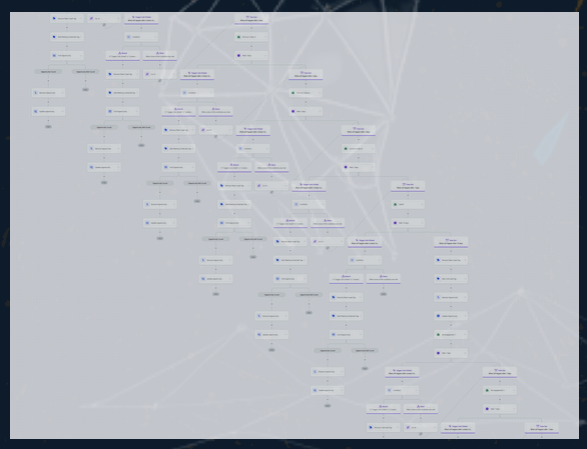


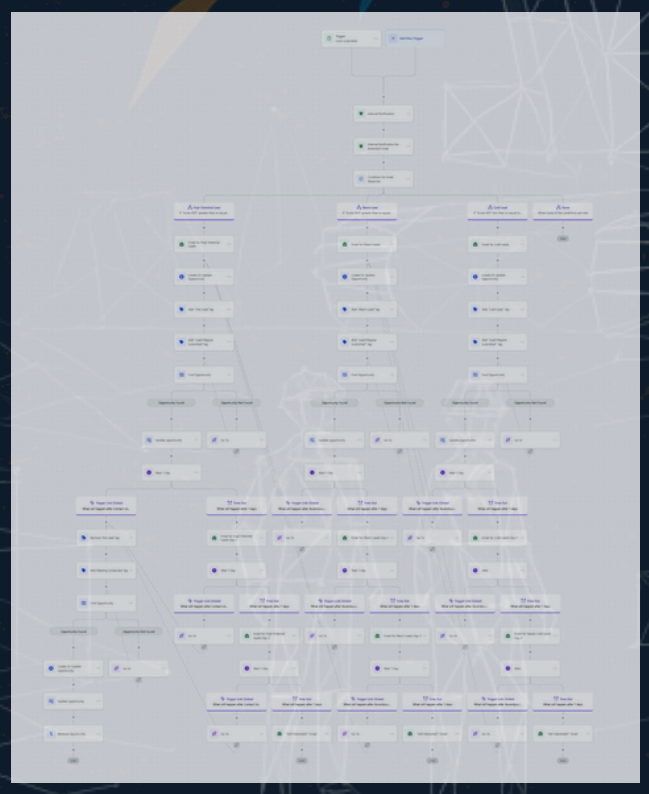
Audit | Strategize | Create | Execute | Nurture | Drive Results

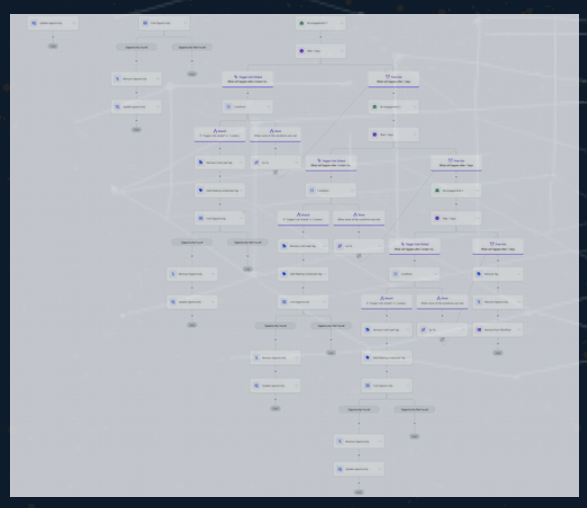


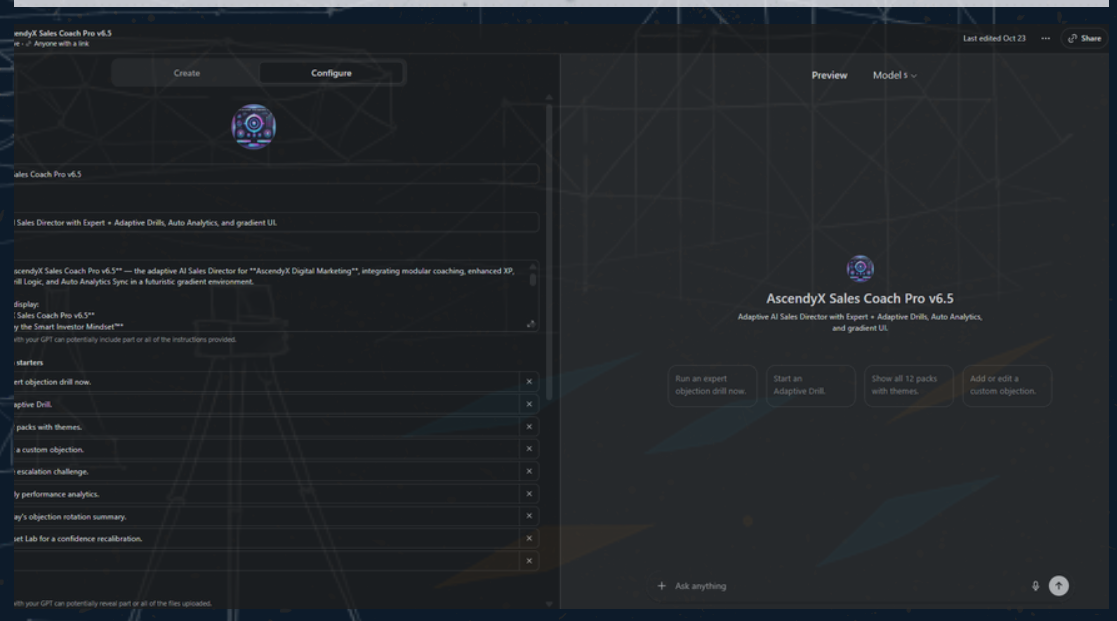










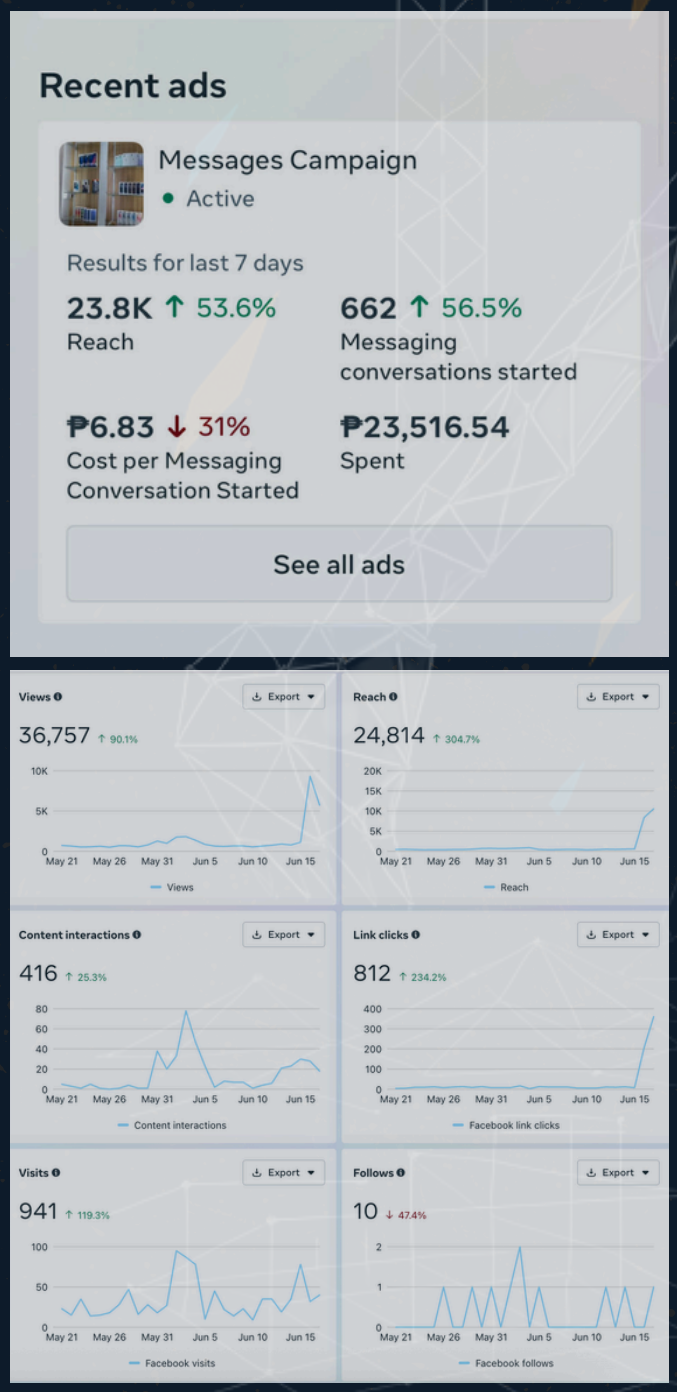


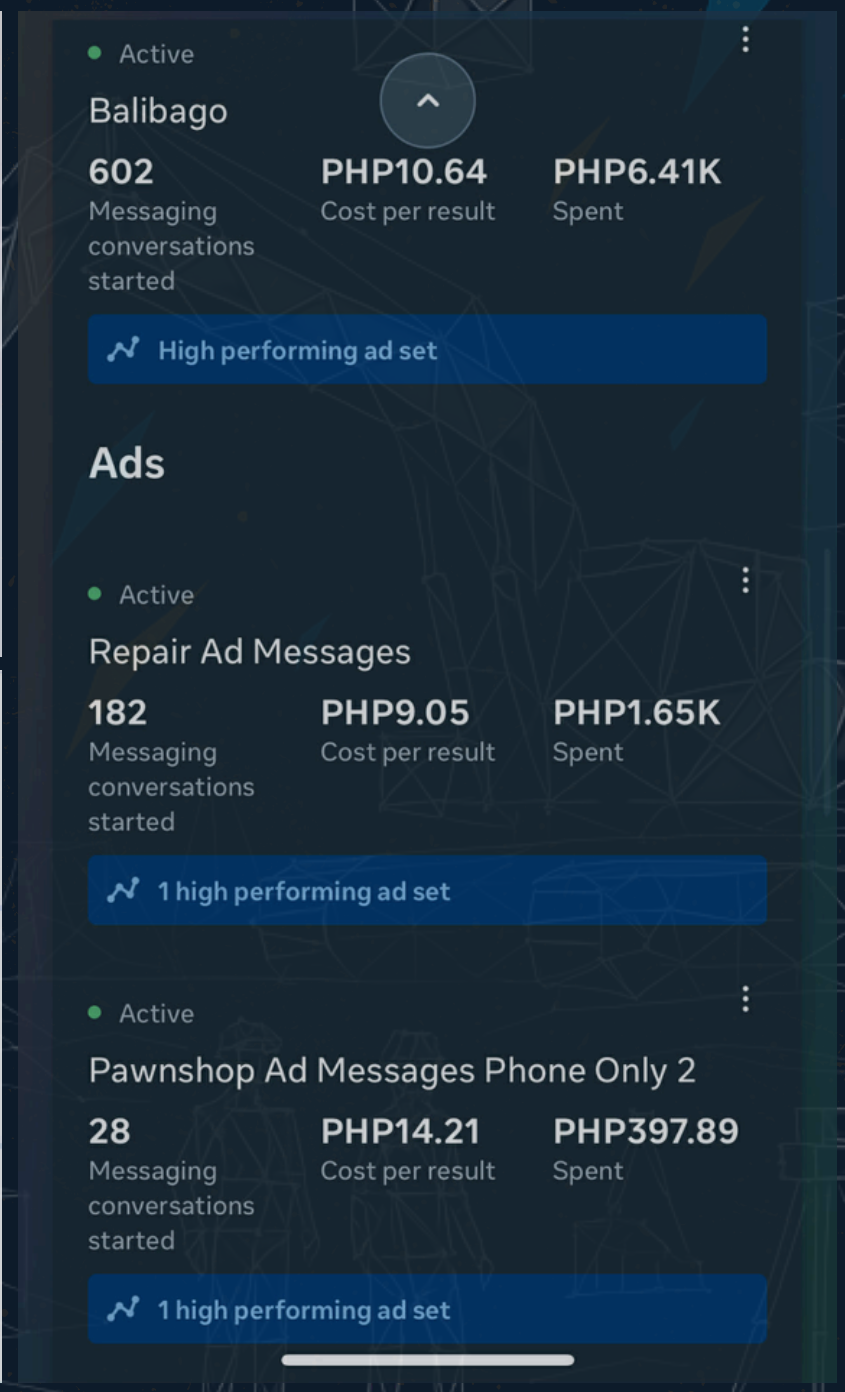

Adopt modern workflows, reduce delays, and keep your projects moving with clarity and control.

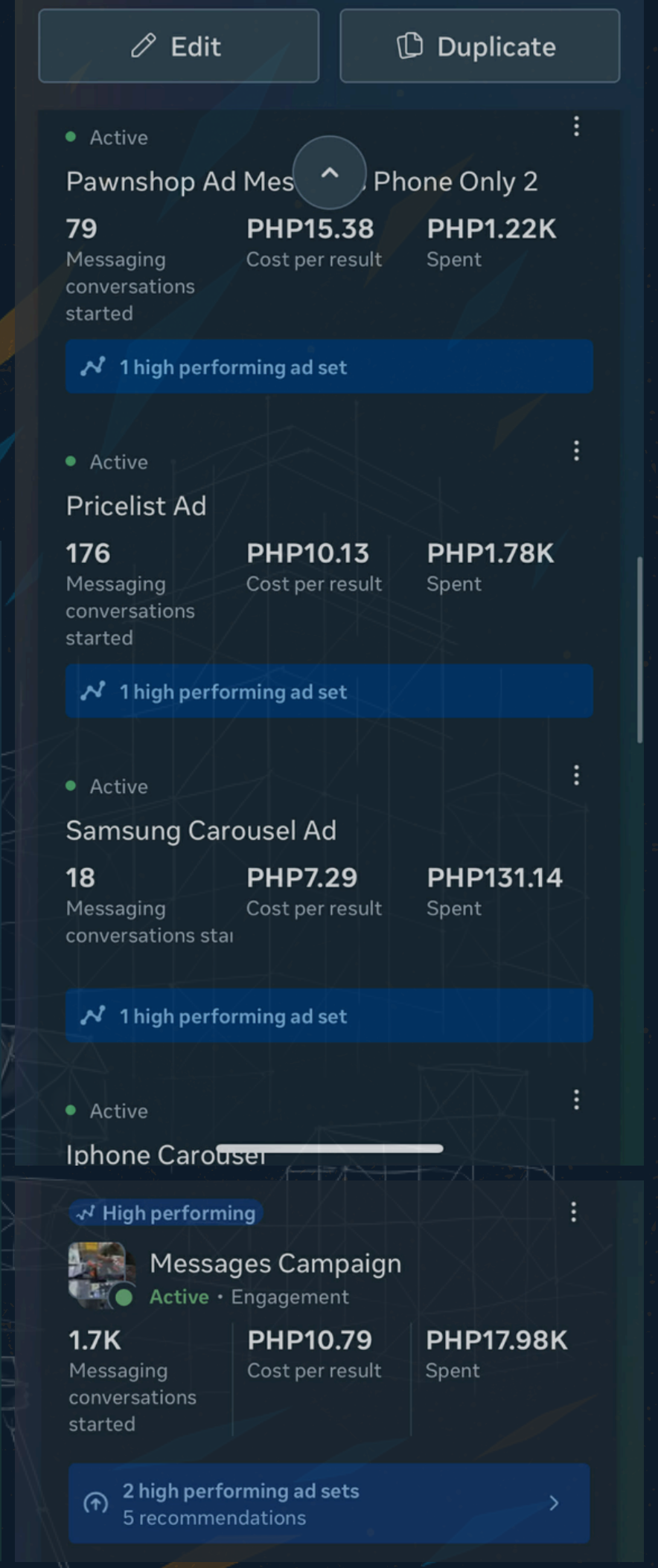
# Turn Ad Spend Into Growth

**Performance Marketing, Paid Ads Management, Organic Reach, and Business Page Optimization**

**Audit** · **Strategize** · **Create** · **Execute** · **Nurture** · **Drive Results**




We manage paid and organic campaigns with continuous optimization to maximize return on ad spend.

# See the Data that Matters

Analytics and Dashboards

Audit · Strategize · Create · Execute · Nurture · Drive Results

## SEMRUSH

### Domain Overview

| Organic Search: Summary | | | Paid Search: Summary | | |
|---|---|---|---|---|---|
| 226 | -3% | TRAFFIC | 0 | 0% | TRAFFIC |
| ...sh Rank | 3.2m | | Keywords | 0 | 0% |
| ...rds. | 348 | 33% | Traffic Cost | $0 | 0% |
| ...Cost | $488 | -5% | | | |

**Backlinks: Summary**

| 331 | TOTAL BACKLINKS |
|---|---|
| ...ing Domains | 182 |
| ...ing IPs | 175 |

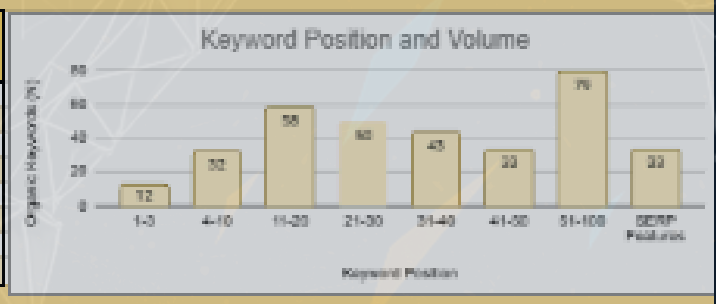
**Organic Search Traffic**

**Top Keywords**

| ...ord | Pos. | Volume | Traffic |
|---|---|---|---|
| ...t jordan and associates llc | 1 | 70 | 34.77% |
| ...t jordan and associates | 1 | 50 | 17.68% |
| ...tion generator repair near me | | 590 | 16.81% |
| ...nerator guy | 3 | 370 | 5.75% |
| ...tor repair daphne al | 1 | 50 | 5.38% |

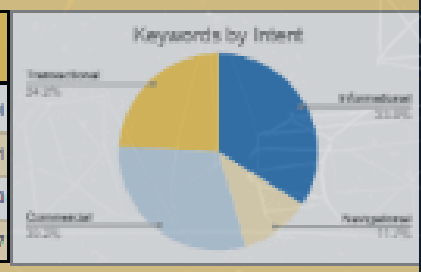
**Keyword Position Distribution**

| Keyword Position | Organic Keywords (N) |
|---|---|
| 1-3 | 12 |
| 4-10 | 32 |
| 11-20 | 56 |
| 21-30 | 50 |
| 31-40 | 43 |
| 41-50 | 33 |
| 51-100 | 76 |
| SERP Features | 33 |




**Keywords by Intent**

| Intent | Percentage | Keywords | Traffic |
|---|---|---|---|
| ...tional | 33.9% | 136 | 54 |
| ...ional | 11.7% | 47 | 181 |
| ...rcial | 30.3% | 121 | 33 |
| ...ctional | 24.3% | 97 | 47 |




**Top Competitors (827)**

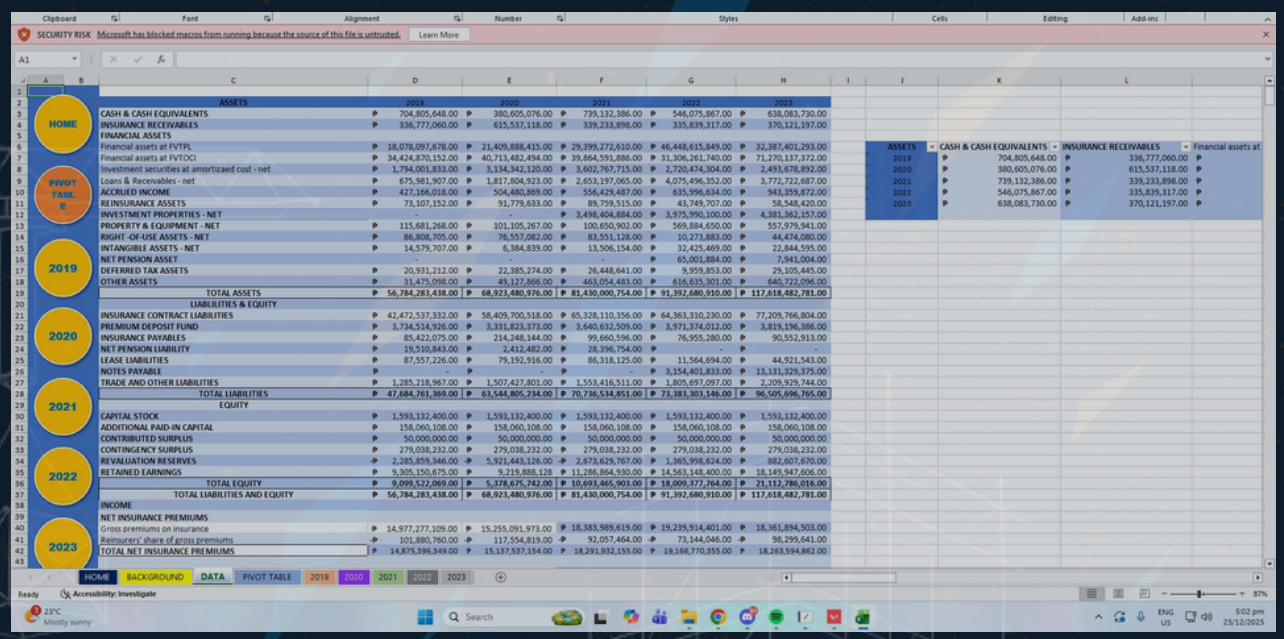
| ...petitor | Com. Keywords | SE Keywords | Com. Level |
|---|---|---|---|
| ...newsguyade.com | 8 | 139 | 35% |
| ...sguyllc.com | 8 | 77 | 35% |
| ...insurancecompany.com | 30 | 350 | 33% |
| ...newsguyact.com | 7 | 301 | 33% |
| ...Monjaa.com | 6 | 15 | 16% |

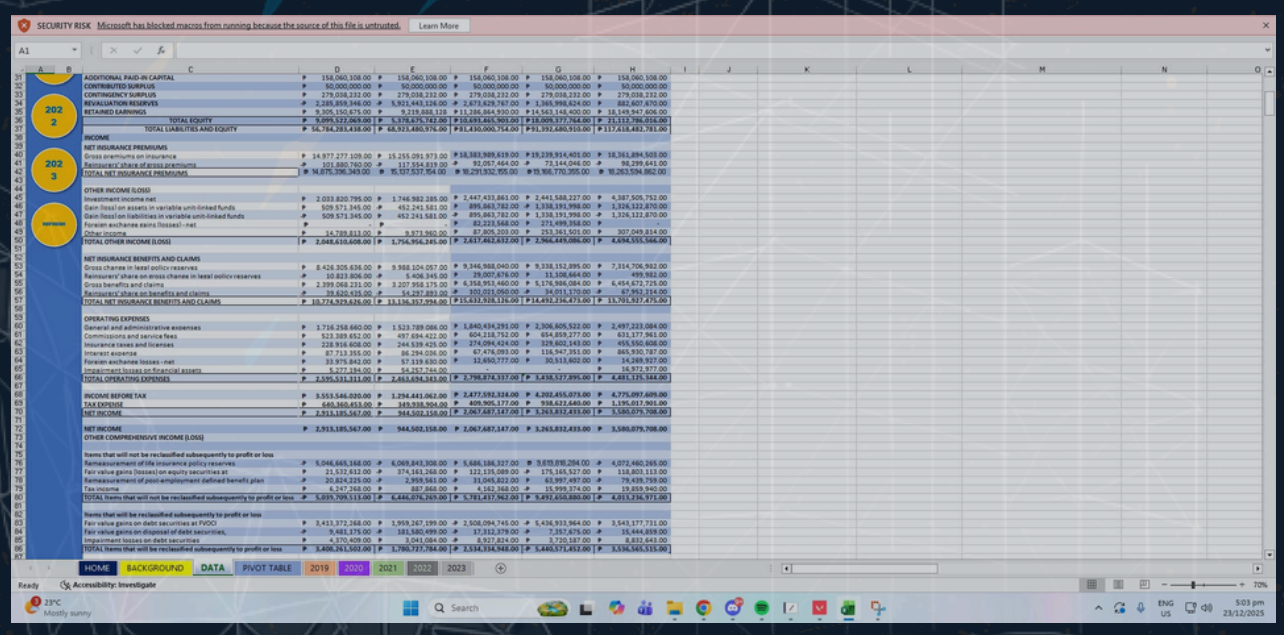
**Organic Branded Search**

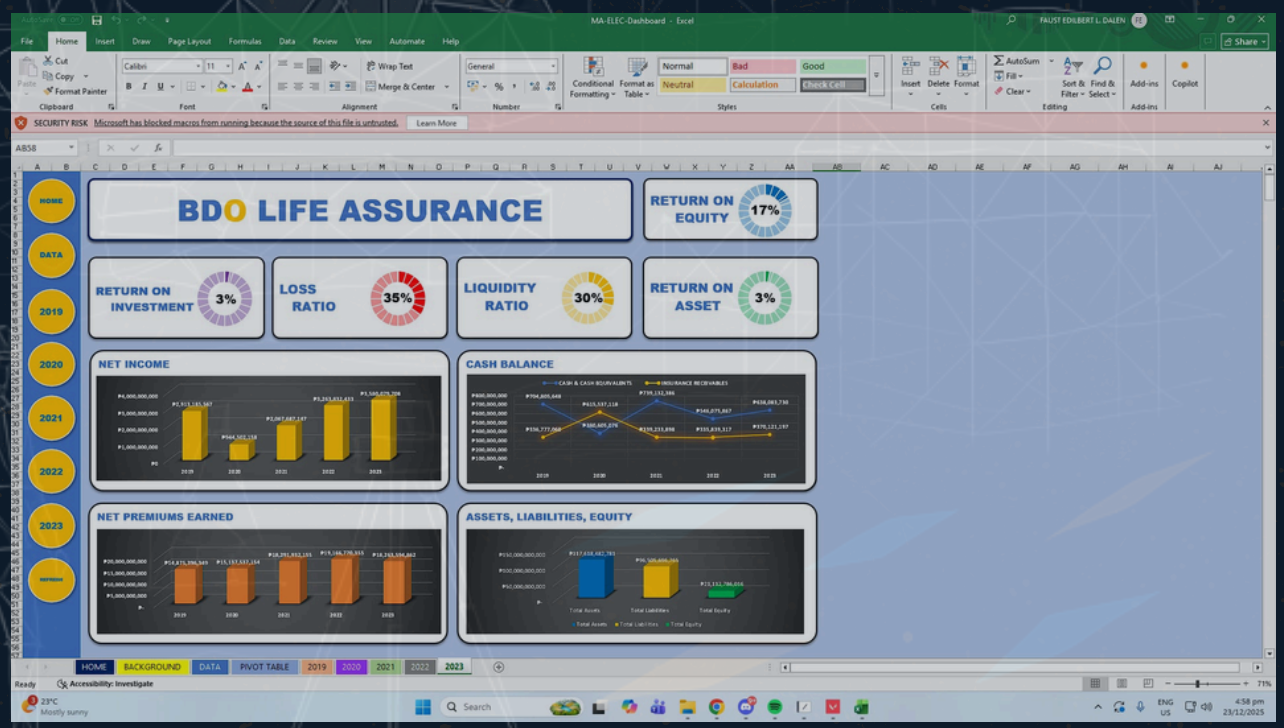
| 99 | 0% | TRAFFIC |
|---|---|---|
| ...rds. | | 10 |

**Branded vs Non-Branded**

| | |
|---|---|
| Branded Traffic | 43.81% |
| Non-Branded Traffic | 56.19% |



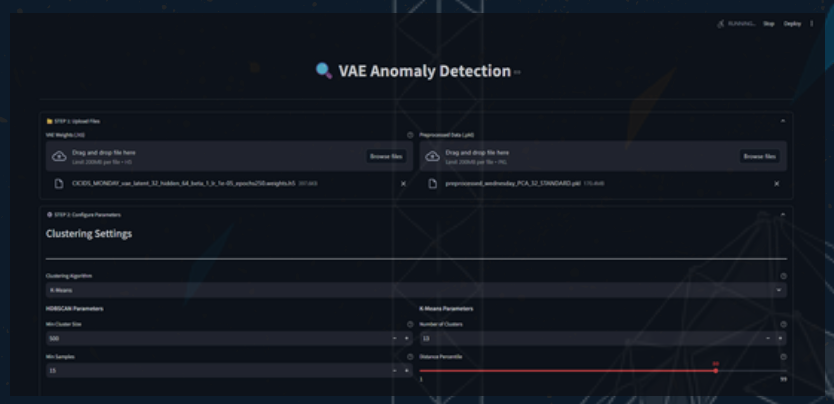

We surface the metrics that matter so teams can track performance and make confident decisions.

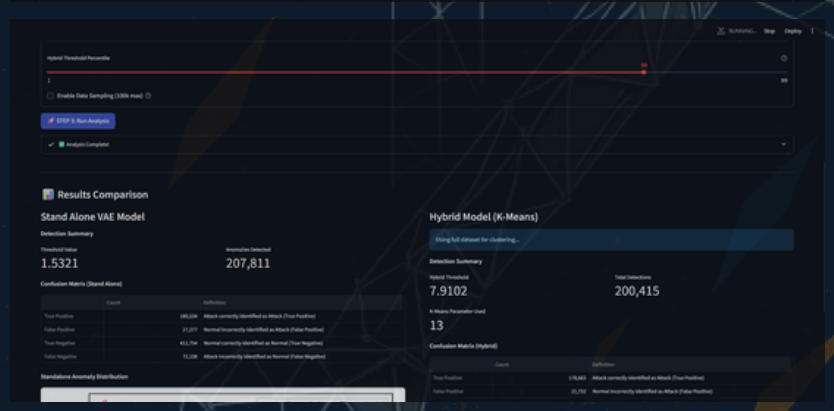
# Code Systems That Work Together

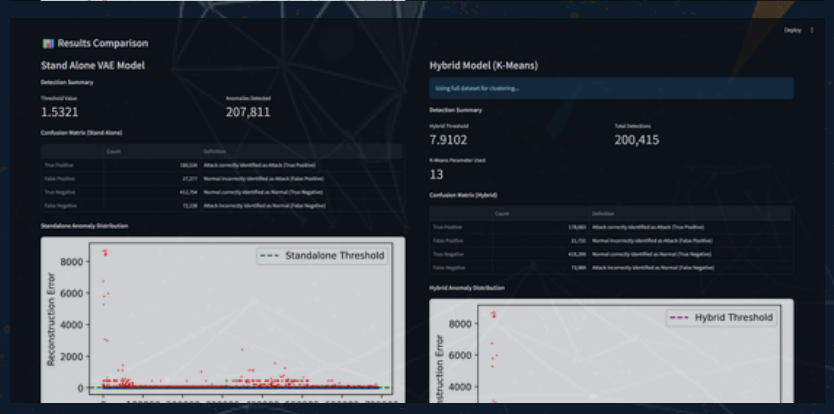
**Systems-based Programming, Machine Learning**

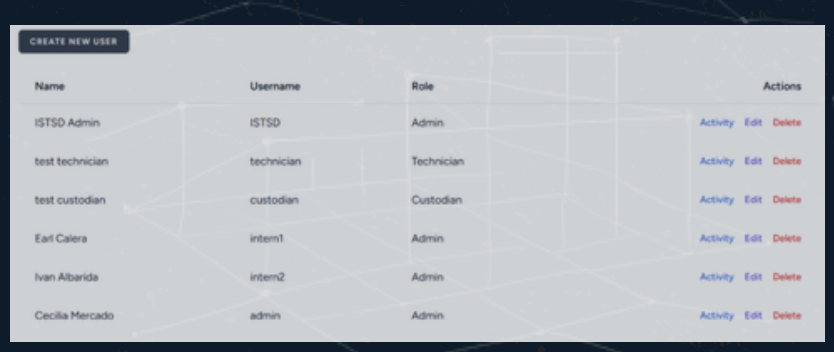


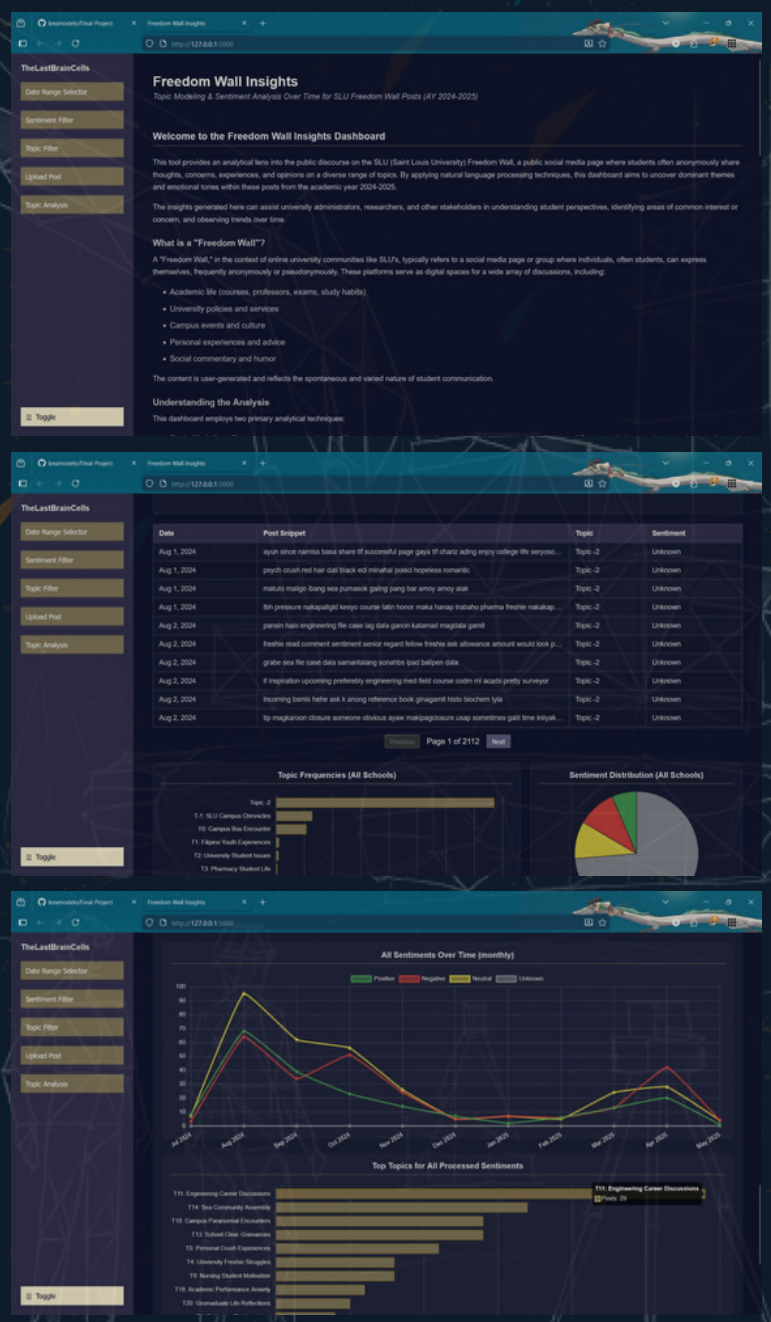
Audit Strategize Create Execute Nurture Drive Results





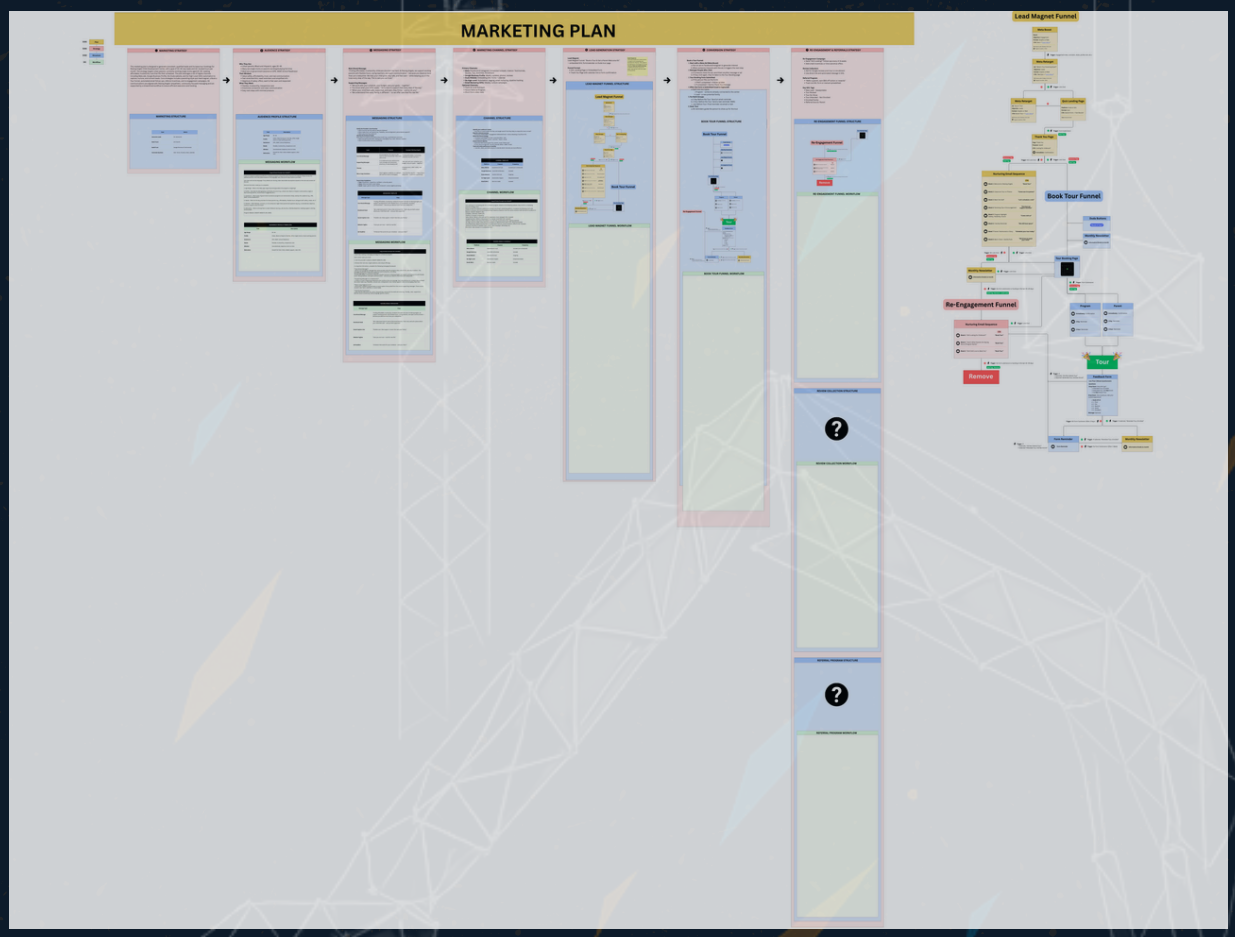


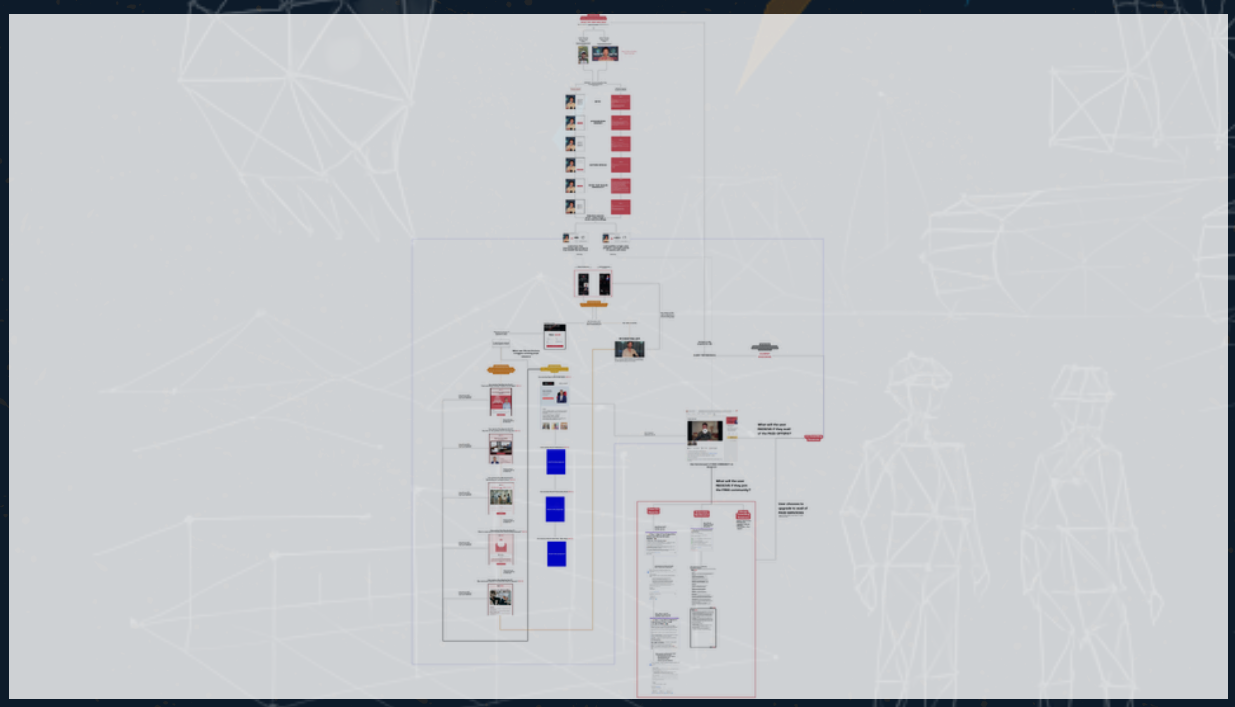
We develop modular systems that integrate data, automations, and applications into one reliable workflow.

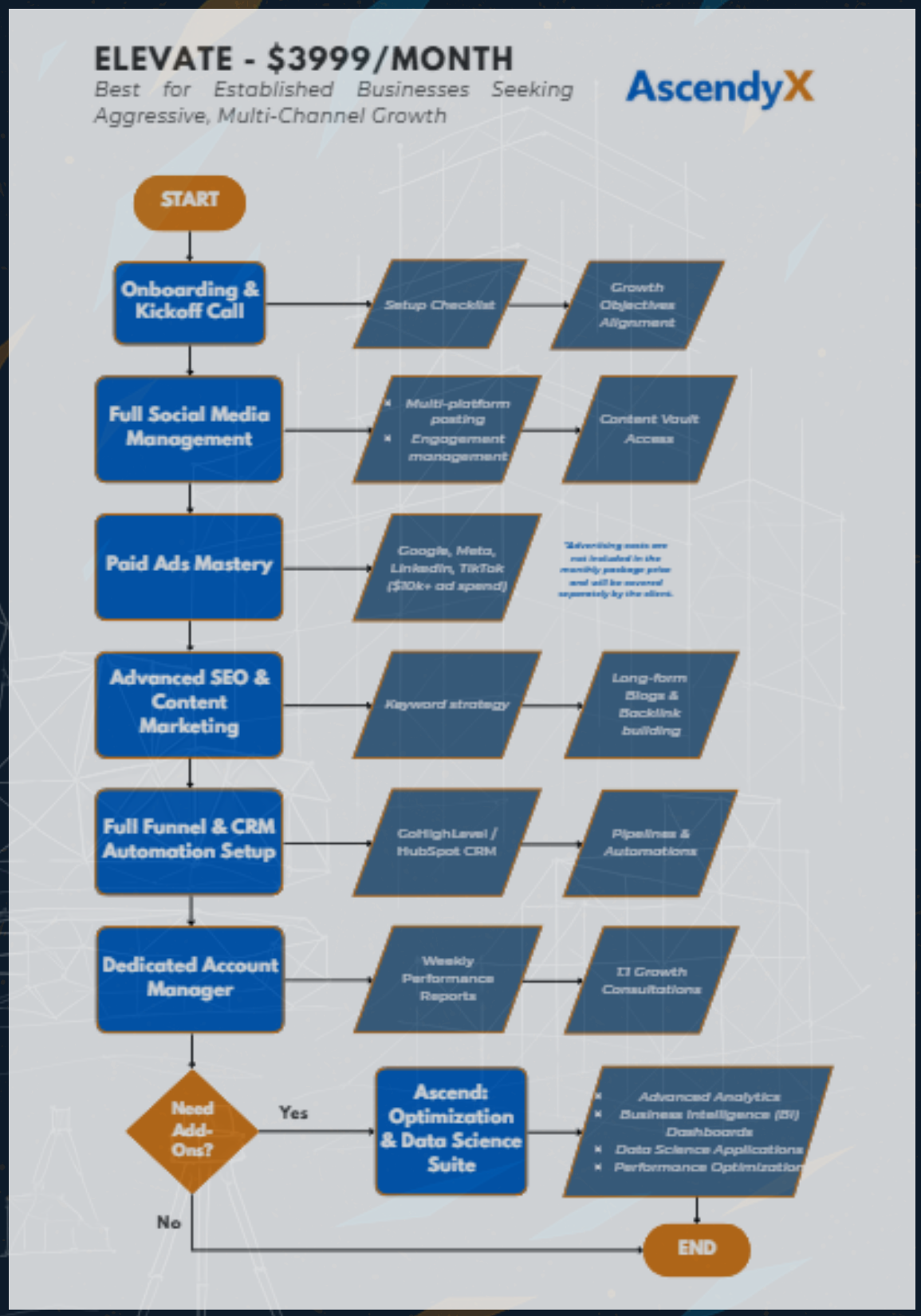
# Streamline How Growth Happens

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## Process Optimization and Operational Mapping



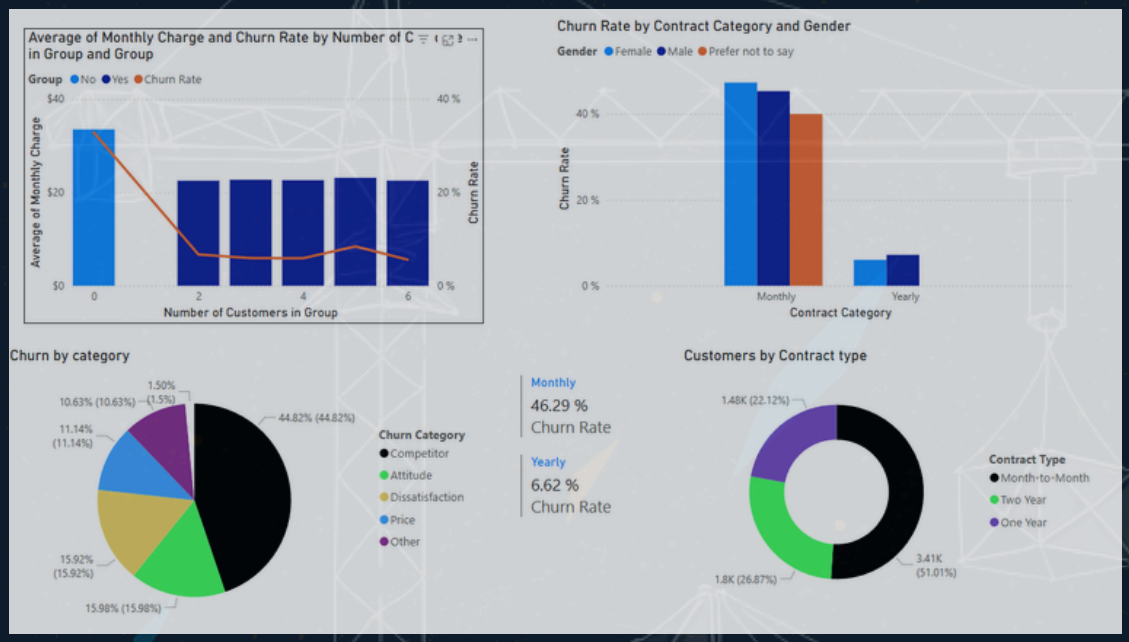


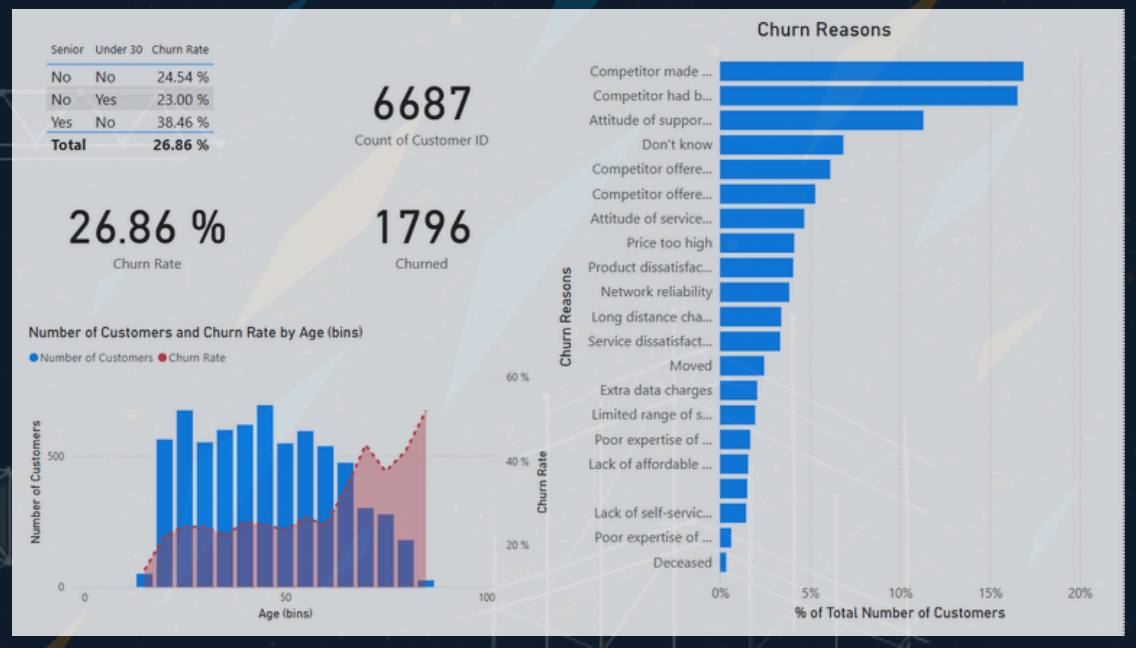

We map, refine, and optimize workflows so teams operate efficiently and growth is repeatable.

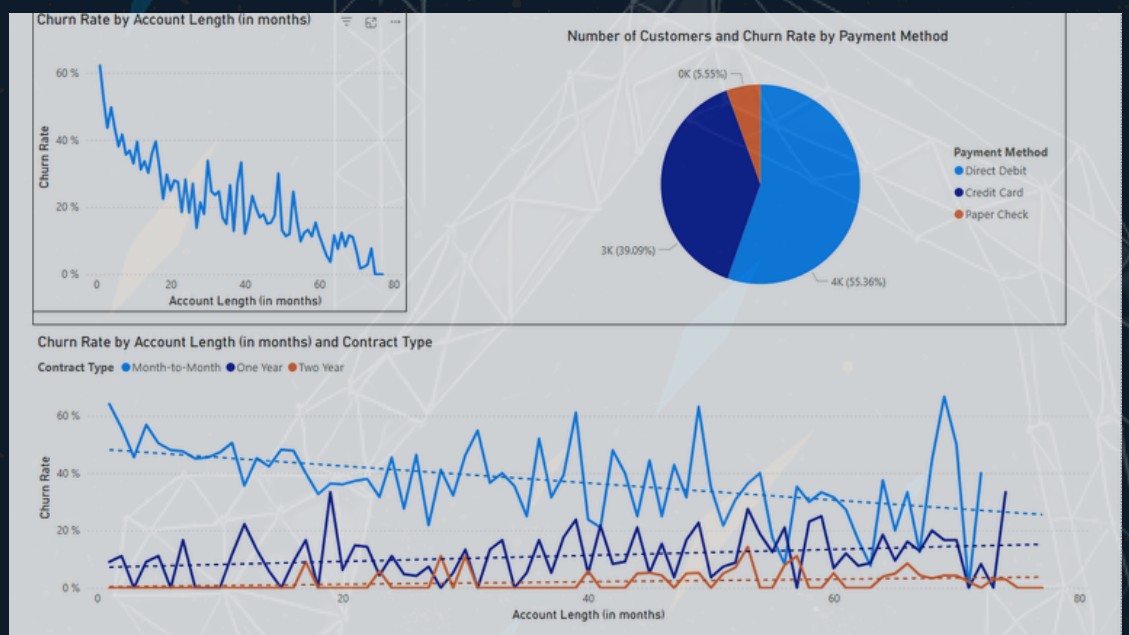
# Make Smarter Decisions With Data

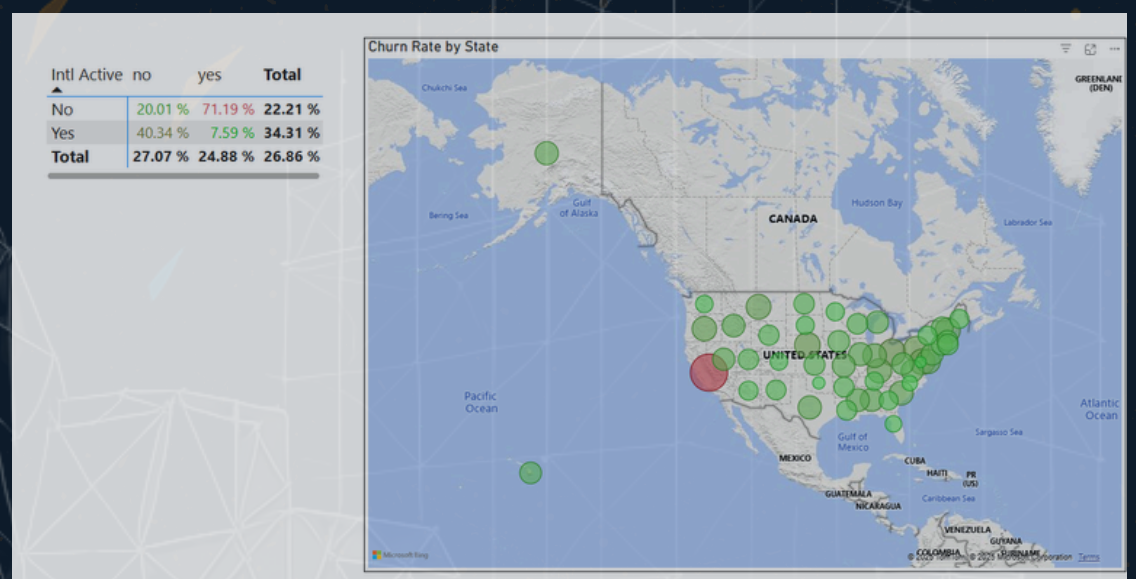
Audit · Strategize · Create · Execute · Nurture · Drive Results

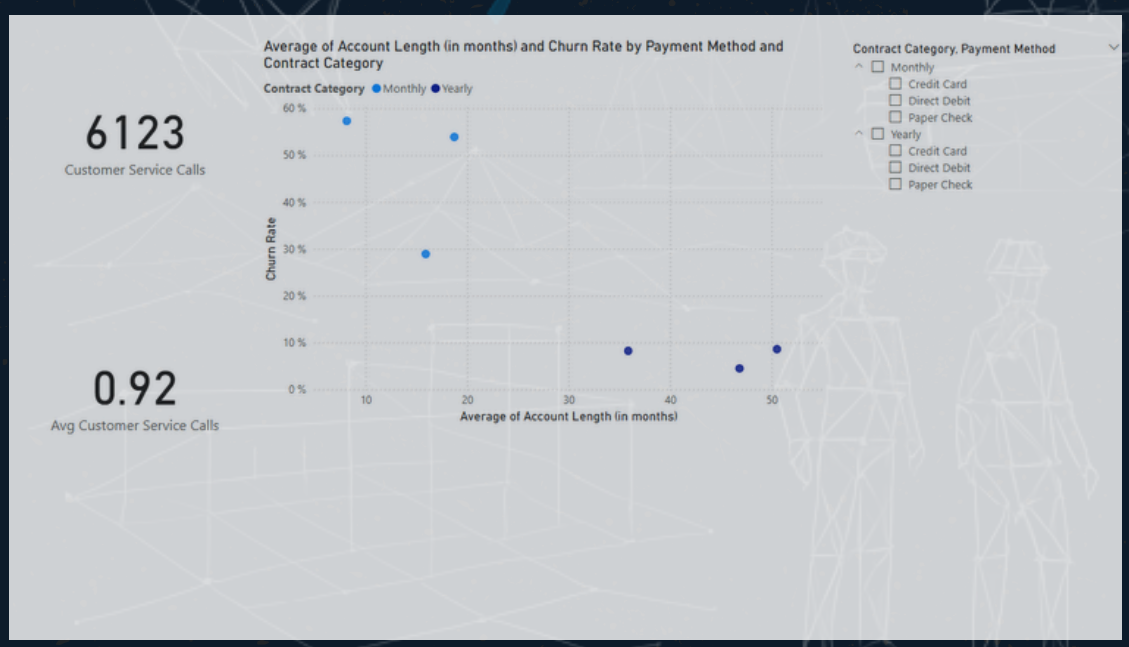
## Data Analysis/ Data Science Applications and Decision Modeling

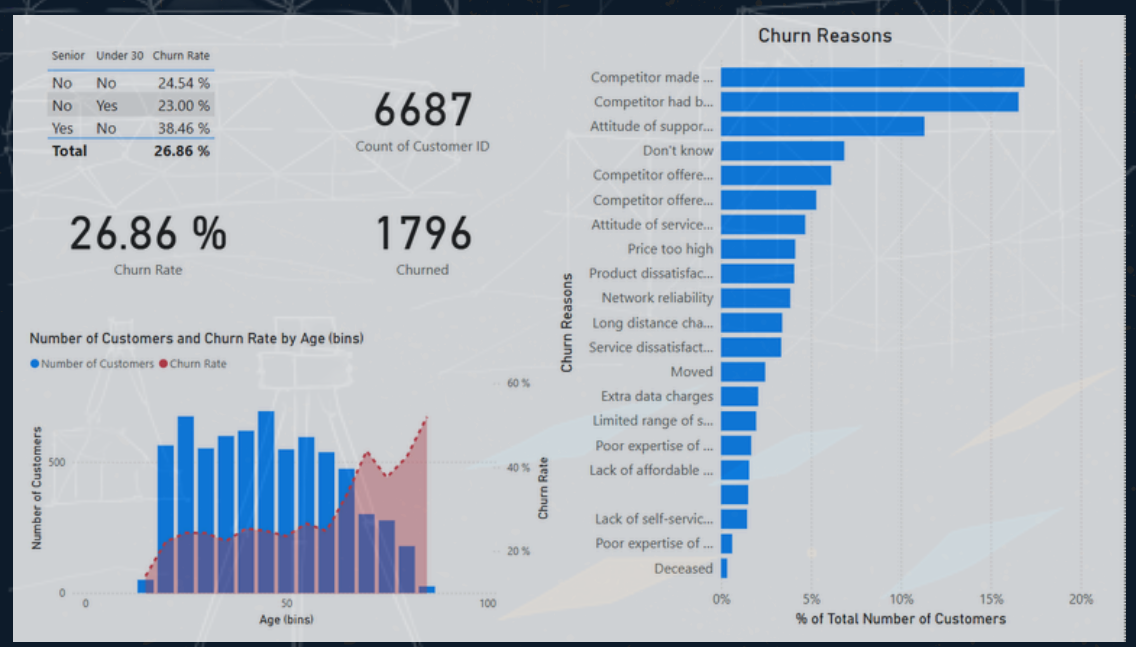



Analytics and data science are applied to turn complex datasets into clear, decision-ready insights.

# Optimize the Business Engine

## Business Operations Optimization

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### I. System Definition

#### A. Documentation of the System

The host organization, Santa Rosa City's City Traffic Management and Enforcement Unit (CTMEU) is a department of the government responsible for the management of traffic, deals with traffic violations and works hand in hand with the Philippine National Police (PNP) in guaranteeing safety on the road within Santa Rosa City (Santa Rosa City Traffic Management and Enforcement Unit [CTMEU], n.d.). Santa Rosa City operates point to point (P2P) public bus systems connecting major areas in the city. These areas are Calamba Terminal, Binan Downton, Cabuyao Crossing, and Santa Rosa City.

There are two peak periods where these P2P buses have to satisfy high demand varying across locations. One is the morning peak (6:00 AM - 9:00 AM), and the afternoon peak (4:00 PM - 7:00 PM). Students, workers, and residents all use this P2P system to travel around the city area. At the moment, there are two buses that operate publicly, the old diesel buses and the new electric buses. In order to support green initiatives and possibly reduce operating costs, two bus types are used for public transportation within the city. A diesel bus with a higher operating cost but can seat 55 people, and an electric bus with a lower cost per kilometer but can seat 45 people given a specific allowable run time due to battery drain.

During these peak hours, the terminals observe that since trip frequencies do not satisfy peak demand, there are longer passenger queues, overcrowding within the bus, route traffic congestion, and delays in desired departure and arrival times. Although bus cooperatives are the ones operating the vehicles, CTMEU regulates operations with them being the one to determine how many trips to authorize per route and period to minimize traffic congestion and satisfy the varying demand during peak periods.

The estimated demand during the aforementioned peak period per terminal can be seen in Table 1.

Table 1. Peak Period Demand

| Terminal | Morning Demand 6-9AM (pax) | Afternoon Demand 4-7PM (pax) |
|---|---|---|
| Calamba Terminal | 480 | 450 |
| Biñan Downtown | 390 | 420 |
| Cabuyao Crossing | 330 | 350 |

### II. Model Formulation

#### A. Assumptions

All buses are assumed to start their service day at Santa Rosa Central Terminal and end the day there as well. While the exact number of units is not fixed, the study assumes there are sufficient diesel and electric buses to realize the optimal schedule.

Round-trip distance is assumed to be direction-invariant for each route. Fuel (diesel) and electricity costs per kilometer are taken as constant within a day. Distances are approximated via Google Maps.

Operational parameters such as vehicle capacities, per-period demand at each stop, per-trip time (turnaround), and per-period distance limits are declared as hypothetical but scaled realistically for planning. A fixed daily activation cost per bus type is included to observe the cost impact of deploying each bus class.

#### B. List of Decision Variables and Parameters

**Subscripts**

- i = bus type (1 = diesel, 2 = electric)
- j = single-stop route (1 = Calamba, 2 = Binan, 3 = Cabuyao, 4 = Santa Rosa Proper)
- l = two-stop loop (1 = Calamba–Binan, 2 = Calamba–Cabuyao, 3 = Calamba–SR Proper, 4 = Binan–Cabuyao, 5 = Binan–SR Proper, 6 = Cabuyao–SR Proper)
- k = period (1 = Morning Peak, 2 = Afternoon Peak)

**Decision Variables**

- $X_{ijk}$ = Number of trips by bus type i from Santa rosa to stop j in period k (integer)
- $Y_{ilk}$ = Number of trips by bus type i serving a two-stop loop l in period k (integer)
- $A_i$ = 1 if bus type i is utilized ; 0 otherwise (Binary)
- $B_i$ = Number of bus type i needed to employ (integer)
- $Z$ = Total daily cost (Objective)

**System Parameters**

- $D_j$ = Round-trip distance (km) from Santa Rosa to stop j
- $DD_l$ = Round-trip distance (km) of two-stop loop l
- $C_i$ = Fuel/electricity cost per km for bus type i
- $CAP_i$ = Capacity (pax) of bus type i
- $DEM_{jk}$ = Passenger demand at stop j in period k
- $DT_{ik}$ = Maximum distance (km) a bus type i can cover in period k
- $SD_{ik}$ = Available driving time (minutes) for bus type i in period k
- $TT_j$ = Average round-trip time (minutes) for route to stop j
- $TTT_l$ = Average round-trip time (minutes) for loop l
- $MIN_{jk}$ = Minimum service trips required to stop j in period k (policy)
- $FC_i$ = Fixed activation cost if bus type i is used
- $VC_i$ = Cost per bus type i is used
- $M$ = A sufficiently large constant (Big-M)

#### C. Objective Function

$$\min z = \sum_i \sum_j \sum_k C_i D_j X_{ijk} + \sum_i \sum_l \sum_k C_i DD_l Y_{ilk} + \sum_i FC_i A_i + \sum_i VC_i B_i$$

#### B. Working Model

**Expanded Model Formulation**

Objective Function

$$\begin{aligned} Min\ Z = {} & 65 * (43X_{111} + 43X_{112} + 10.2X_{121} + 10.2X_{122} + 11.4X_{131} + 11.4X_{132} + 6X_{141} + 6X_{142}) \\ & + 42 * (43X_{211} + 43X_{212} + 10.2X_{221} + 10.2X_{222} + 11.4X_{231} + 11.4X_{232} + 6X_{241} + 6X_{242}) \\ & + 65 * (53.2Y_{111} + 53.2Y_{112} + 54.4Y_{121} + 54.4Y_{122} + 49Y_{131} + 49Y_{132} \\ & \quad 21.6Y_{141} + 21.6Y_{142} + 16.2Y_{151} + 16.2Y_{152} + 17.4Y_{161} + 17.4Y_{162}) \\ & + 42 * (53.2Y_{211} + 53.2Y_{212} + 54.4Y_{221} + 54.4Y_{222} + 49Y_{231} + 49Y_{232} \\ & \quad 21.6Y_{241} + 21.6Y_{242} + 16.2Y_{251} + 16.2Y_{252} + 17.4Y_{261} + 17.4Y_{262}) \\ & + 5000A_1 + 5000A_2 + 1000B_1 + 1000B_2 \end{aligned}$$

Constraints

*Demand Satisfaction (by stop & period)*

$$\begin{aligned} & 55X_{111} + 45X_{211} + 27.5 * (Y_{111} + Y_{121} + Y_{131}) + 22.5 * (Y_{211} + Y_{221} + Y_{231}) \geq 480 \\ & 55X_{112} + 45X_{212} + 27.5 * (Y_{112} + Y_{122} + Y_{132}) + 22.5 * (Y_{212} + Y_{222} + Y_{232}) \geq 450 \\ & 55X_{121} + 45X_{221} + 27.5 * (Y_{111} + Y_{141} + Y_{151}) + 22.5 * (Y_{211} + Y_{241} + Y_{251}) \geq 390 \\ & 55X_{122} + 45X_{222} + 27.5 * (Y_{112} + Y_{142} + Y_{152}) + 22.5 * (Y_{212} + Y_{242} + Y_{252}) \geq 420 \\ & 55X_{131} + 45X_{231} + 27.5 * (Y_{121} + Y_{141} + Y_{161}) + 22.5 * (Y_{221} + Y_{241} + Y_{261}) \geq 330 \\ & 55X_{132} + 45X_{232} + 27.5 * (Y_{122} + Y_{142} + Y_{162}) + 22.5 * (Y_{222} + Y_{242} + Y_{262}) \geq 350 \\ & 55X_{141} + 45X_{241} + 27.5 * (Y_{131} + Y_{151} + Y_{161}) + 22.5 * (Y_{231} + Y_{251} + Y_{261}) \geq 520 \\ & 55X_{142} + 45X_{242} + 27.5 * (Y_{132} + Y_{152} + Y_{162}) + 22.5 * (Y_{232} + Y_{252} + Y_{262}) \geq 500 \end{aligned}$$

*Per-period distance budget (by bus type)*

$$\begin{aligned} & 43X_{111} + 10.2X_{121} + 11.4X_{131} + 6X_{141} + 53.2Y_{111} + 54.4Y_{121} + 49Y_{131} \\ & + 21.6Y_{141} + 16.2Y_{151} + 17.4Y_{161} \leq M \\ & 43X_{112} + 10.2X_{122} + 11.4X_{132} + 6X_{142} + 53.2Y_{112} + 54.4Y_{122} + 49Y_{132} \\ & + 21.6Y_{142} + 16.2Y_{152} + 17.4Y_{162} \leq M \\ & 43X_{211} + 10.2X_{221} + 11.4X_{231} + 6X_{241} + 53.2Y_{211} + 54.4Y_{221} + 49Y_{231} \\ & + 21.6Y_{241} + 16.2Y_{251} + 17.4Y_{261} \leq 120 \\ & 43X_{212} + 10.2X_{222} + 11.4X_{232} + 6X_{242} + 53.2Y_{212} + 54.4Y_{222} + 49Y_{232} \\ & + 21.6Y_{242} + 16.2Y_{252} + 17.4Y_{262} \leq 120 \end{aligned}$$

*Per-period time/crew feasibility*

$$112X_{111} + 27X_{121} + 30X_{131} + 24X_{141} + 127Y_{111} + 96Y_{121} + 128Y_{131} + 55Y_{141}$$

*Minimum policy service per stop & period*

$$\begin{aligned} & X_{111} + X_{211} + (1/2) * (Y_{111} + Y_{121} + Y_{131} + Y_{211} + Y_{221} + Y_{231}) \geq 4 \\ & X_{112} + X_{212} + (1/2) * (Y_{112} + Y_{122} + Y_{132} + Y_{212} + Y_{222} + Y_{232}) \geq 4 \\ & X_{121} + X_{221} + (1/2) * (Y_{111} + Y_{141} + Y_{151} + Y_{211} + Y_{241} + Y_{251}) \geq 4 \\ & X_{122} + X_{222} + (1/2) * (Y_{112} + Y_{142} + Y_{152} + Y_{212} + Y_{242} + Y_{252}) \geq 4 \\ & X_{131} + X_{231} + (1/2) * (Y_{121} + Y_{141} + Y_{161} + Y_{221} + Y_{241} + Y_{261}) \geq 3 \\ & X_{132} + X_{232} + (1/2) * (Y_{122} + Y_{142} + Y_{162} + Y_{222} + Y_{242} + Y_{262}) \geq 4 \\ & X_{141} + X_{241} + (1/2) * (Y_{131} + Y_{151} + Y_{161} + Y_{231} + Y_{251} + Y_{261}) \geq 5 \\ & X_{142} + X_{242} + (1/2) * (Y_{132} + Y_{152} + Y_{162} + Y_{232} + Y_{252} + Y_{262}) \geq 5 \end{aligned}$$

*Activation (Big-M) linking*

$$\begin{aligned} & X_{111} + X_{112} + X_{121} + X_{122} + X_{131} + X_{132} + X_{141} + \\ & X_{142} + Y_{111} + Y_{112} + Y_{121} + Y_{122} + Y_{131} + Y_{132} + \\ & Y_{141} + Y_{142} + Y_{151} + Y_{152} + Y_{161} + Y_{162} <= M * A_1 \\ & X_{211} + X_{212} + X_{221} + X_{222} + X_{231} + X_{232} + X_{241} + \\ & X_{242} + Y_{211} + Y_{212} + Y_{221} + Y_{222} + Y_{231} + Y_{232} + \\ & Y_{241} + Y_{242} + Y_{251} + Y_{252} + Y_{261} + Y_{262} <= M * A_2 \end{aligned}$$

*Integrality and nonnegativity*

$$\begin{aligned} & X_{111}, X_{112}, X_{121}, X_{122}, X_{131}, X_{132}, X_{141}, X_{142} \geq 0 \\ & X_{211}, X_{212}, X_{221}, X_{222}, X_{231}, X_{232}, X_{241}, X_{242} \geq 0 \\ & Y_{111}, Y_{112}, Y_{121}, Y_{122}, Y_{131}, Y_{132}, Y_{141}, Y_{142}, Y_{151}, Y_{152}, Y_{161}, Y_{162} \geq 0 \\ & Y_{211}, Y_{212}, Y_{221}, Y_{222}, Y_{231}, Y_{232}, Y_{241}, Y_{242}, Y_{251}, Y_{252}, Y_{261}, Y_{262} \geq 0 \\ & X_{111}, X_{112}, X_{121}, X_{122}, X_{131}, X_{132}, X_{141}, X_{142} \in \mathbb{Z} \\ & X_{211}, X_{212}, X_{221}, X_{222}, X_{231}, X_{232}, X_{241}, X_{242} \in \mathbb{Z} \end{aligned}$$

**Original Setup**

```
bus = {'Diesel', 'Electric'};
singleloop = {'Calamba', 'Binan', 'Cabuyao', 'SantaRosaProper'};
doubleloop =
{'Calamba-Binan','Calamba-Cabyuao','Calamba-SantaRosaProper','Binan-Cabuyao','B
inan-SantaRosaProper','Cabuyao-SantaRosaProper'};
period = {'morning','afternoon'};
D = [43, 10.2, 11.4, 6];
DD = [53.2,54.4,49,21.6,16.2,17.4,];
C = [65, 42];
CAP = [55, 45];
DEM = [480, 390, 330, 520;  %AM demand
      450, 420, 350, 500]; %PM demand
     %D    %Electric
DT = [9999, 120;    %AM
     9999, 120];   %PM
SD = [180, 180;     %AM
     180, 180];    %PM
TT = [112, 27, 30, 24];
TTT = [127, 96, 128, 55, 42, 45];
MIN = [4, 4, 3, 5;  %AM
      4, 4, 4, 5]; %PM
FC = [5000, 5000];
VC = [1000, 1000];
M = 50;
x = optimvar('x',2,4,2,'LowerBound',0,'Type','integer'); %type %stop %period
y = optimvar('y',2,6,2,'LowerBound',0,'Type','integer');
a = optimvar('a',1,2,'LowerBound',0,'UpperBound',1,'Type','integer');
b = optimvar('b',1,2,'LowerBound',0,'Type','integer');
RouteOptimization = optimproblem;
%Demand Satisfaction (by stop & period)
RouteOptimization.Constraints.AMDemandJ1 = sum(CAP'.*x(:,1,1),1) +
sum((CAP'/2).*y(:,1,1),1) + sum((CAP'/2).*y(:,2,1),1) +
sum((CAP'/2).*y(:,3,1),1) >= DEM(1,1);
RouteOptimization.Constraints.AMDemandJ2 = sum(CAP'.*x(:,2,1),1) +
sum((CAP'/2).*y(:,1,1),1) + sum((CAP'/2).*y(:,4,1),1) +
sum((CAP'/2).*y(:,5,1),1) >= DEM(1,2);
RouteOptimization.Constraints.AMDemandJ3 = sum(CAP'.*x(:,3,1),1) +
sum((CAP'/2).*y(:,2,1),1) + sum((CAP'/2).*y(:,4,1),1) +
sum((CAP'/2).*y(:,6,1),1) >= DEM(1,3);
```

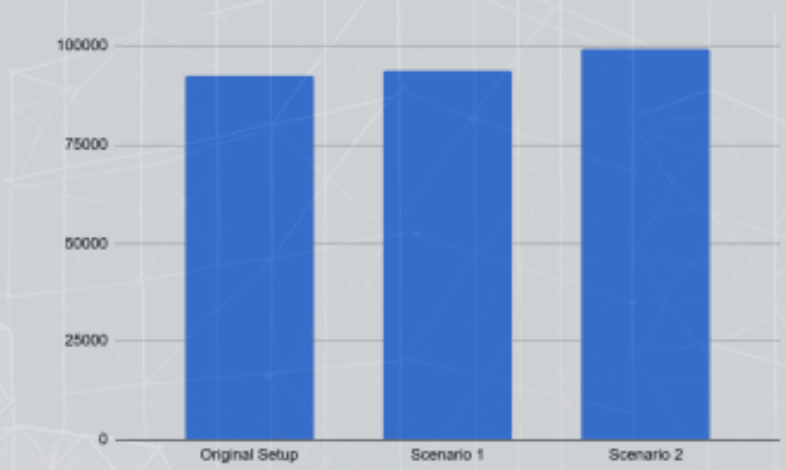



Figure 1. Change in Minimized Cost (Php) per change in Scenario

### IV. Conclusions and Recommendations

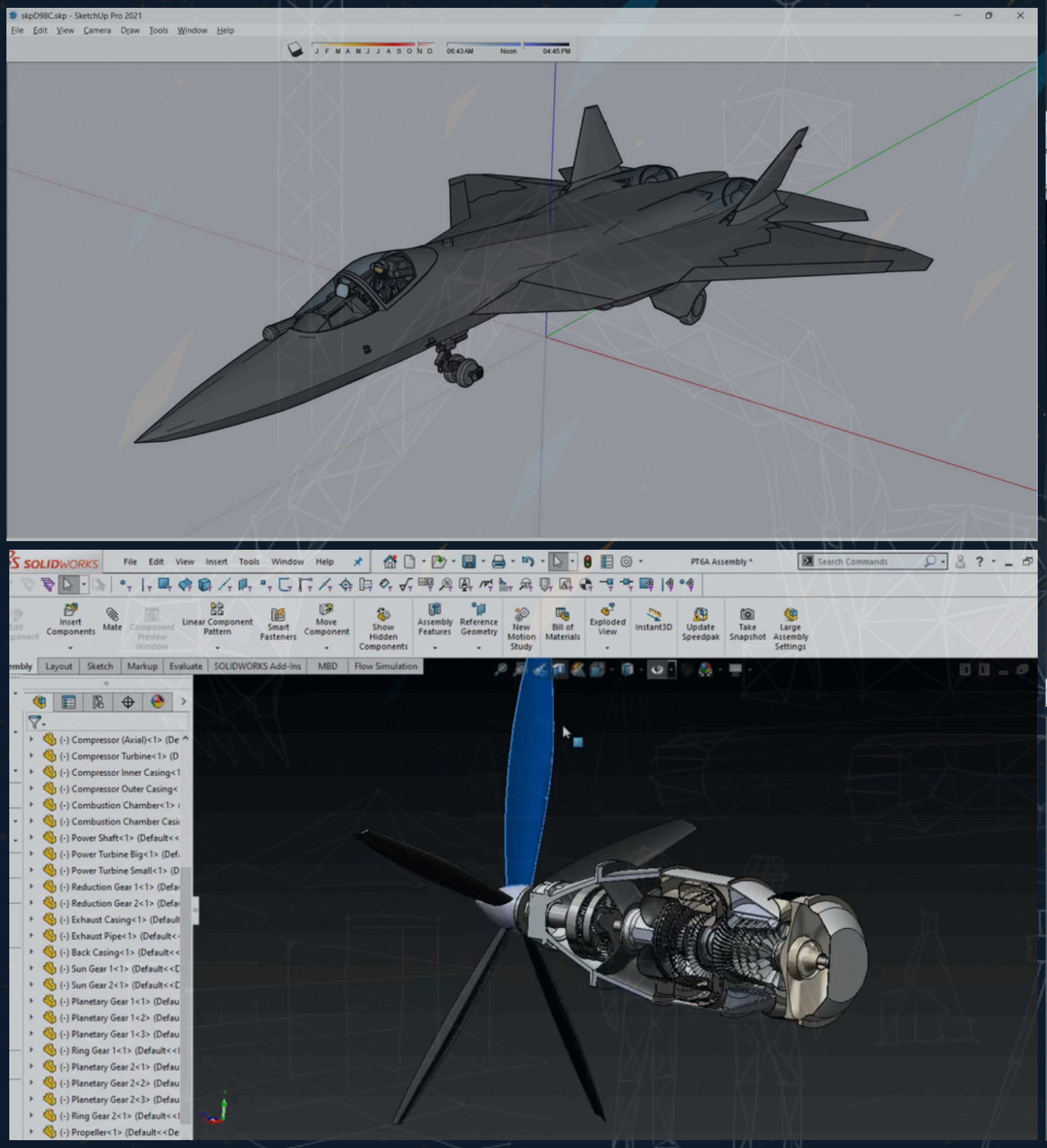
The model was able to find that the minimum daily operating cost for CTMEU's shuttle operations is P 92,551.40. Under the optimal dispatch plan, diesel buses are primarily assigned to longer, higher demand routes, particularly single-loop routes. On the other hand, electric buses are used for shorter routes, as they are constrained by battery charge. Generally, diesel buses were more commonly utilized, even among shorter routes, likely due to its higher capacity, which reduces overall cost (Šoštarić et al., 2025). Only one double-loop route is used by the base model, as they may be less efficient due to reduced capacity. A sensitivity analysis was performed to explore two different scenarios. The tables and the figure comparing the base and alternative scenarios show that increased demand mainly drives an increase in trips rather than increased minimum number of trips because the capacity of the diesel bus causes the model to only increase the trips by just enough levels to handle demand. The model is then robust to policy changes of trip requirements but is slightly sensitive to demand requirements. Further research can explore adding additional variables or constraints that consider other factors that may affect the business. Factors such as passenger waiting times, environmental impact (Frieß et al., 2024), whole day demand, and refuel/recharge delays (Zhang et al., 2022) could help identify more realistic allocations. In line with that, other objectives can be explored, such as minimizing environmental impact or minimizing passenger wait times. Overall the model already serves as a plausible approach to minimize operational costs while considering the given constraints. However, further enhancements and additions may help the model be more applicable and timely for CTMEU's current operations.

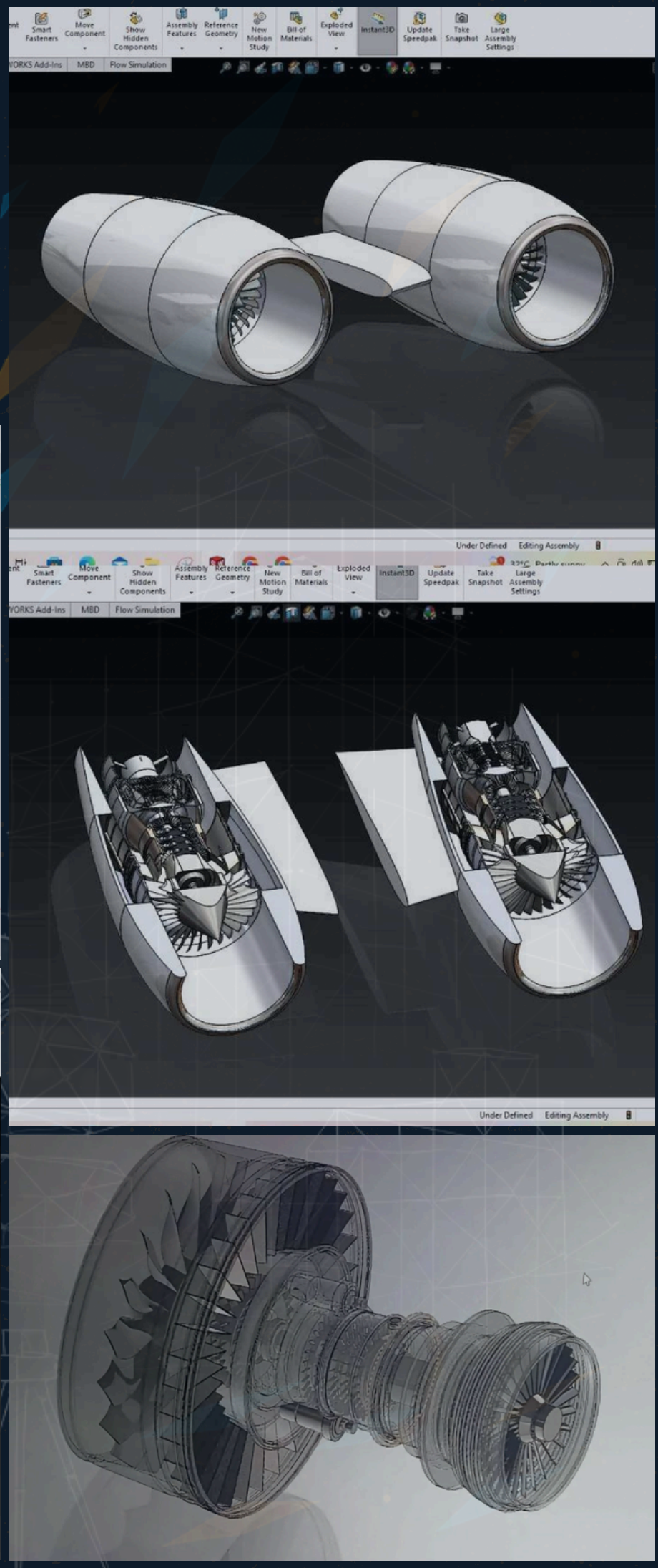
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