Data Aggregation for STC

Hong Kong, C24

Our team

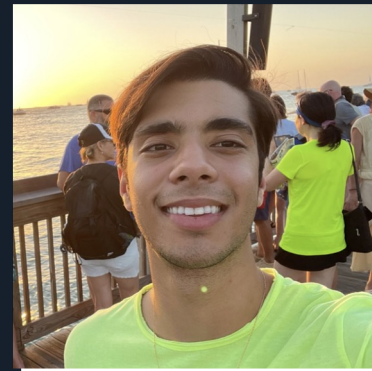**Ansel Chang**

Computer Science, 2025

Daniel Stoiber

Computer Science, 2025

Lorenzo Manfredi Segato

Robotics Engineering, Computer Science, 2025

Pedro Leão

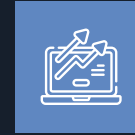Data Science, 2025

Data: A foundation for marketing

Metrics

Insights

Growth

The Data Aggregation Pipeline

Collection

Cleaning

Storage

Visualisation

1st

2nd

3rd

4th

Our Sponsor: Hong Kong Standards and Testing Centre

STC

Testing   Inspection   Certification

Food Products

Pharmaceuticals

Medical Devices

Clothing

Home Appliances

Children's Toys
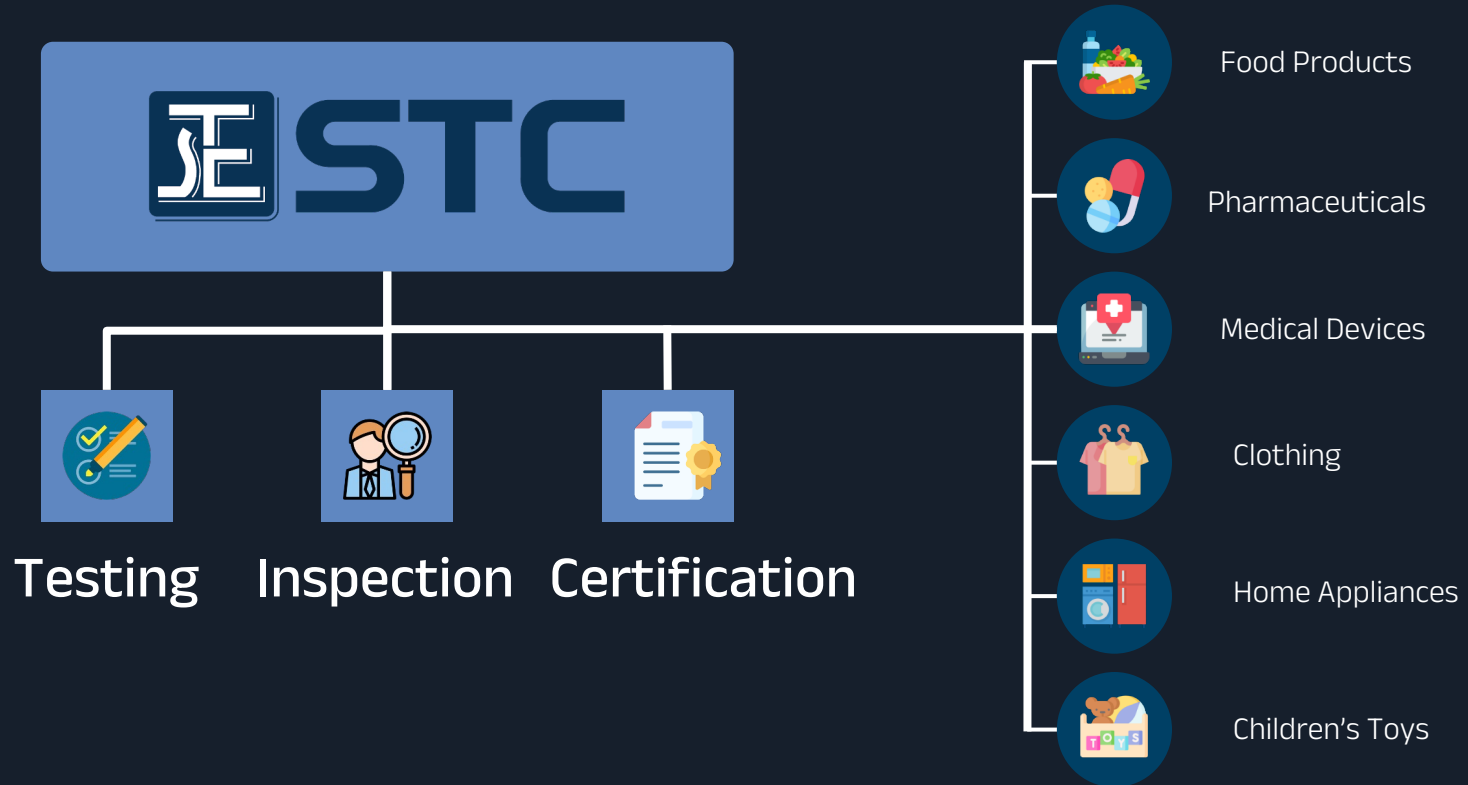
Connecting STC to Data Aggregation

Collecting Social Media Metrics

Using APIs to automatically fetch relevant metrics

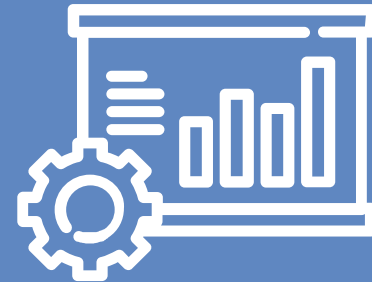### Data Aggregation & Processing

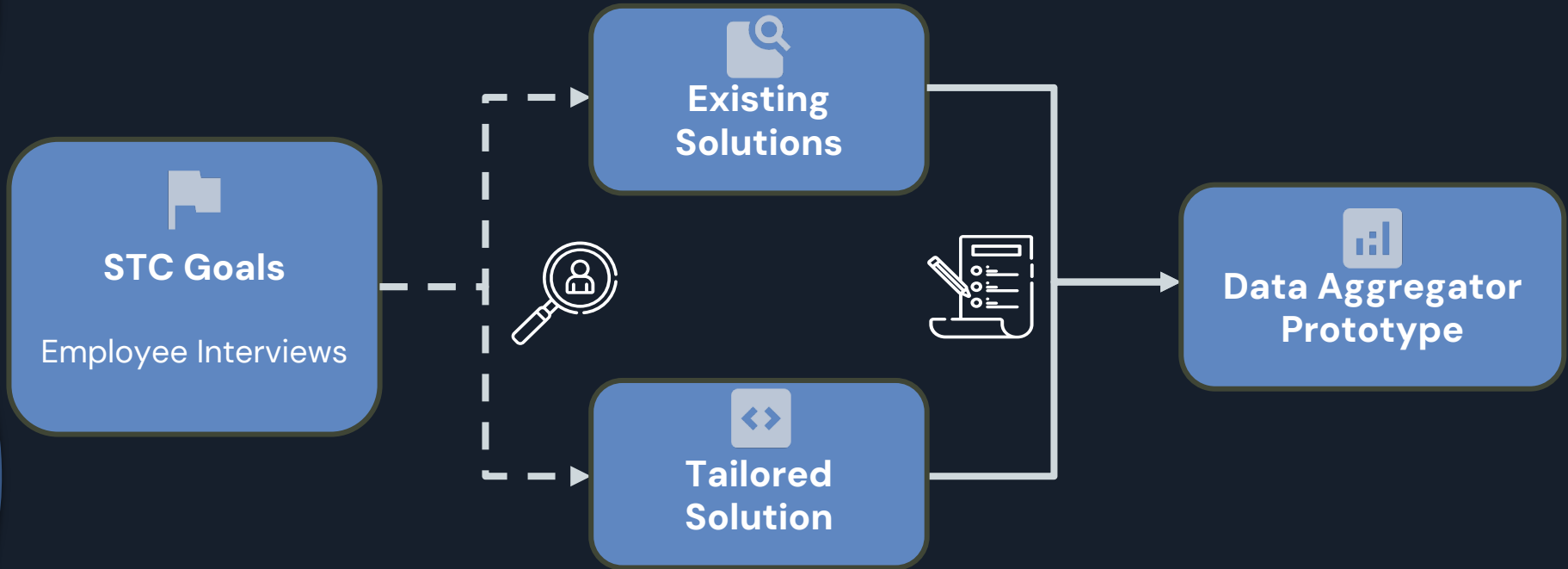Data structuring allowing for analysis

Marketing Insights

Provide tools to enable data-driven marketing decisions

One Solution

A strategic decision

STC Goals

Employee Interviews

Existing Solutions

Tailored Solution

Data Aggregator Prototype

Pros and Cons

Existing Solutions

Off-the-shelf

Already deployed: scalable and robust
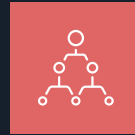
Costly

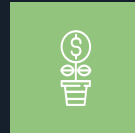Has a cost related to it

Control

Less flexibility and control over the product

Tailored Solution

Prototype

Time constraints may lead to an unpolished product

Cost-effective

No subscription fee

Bespoke

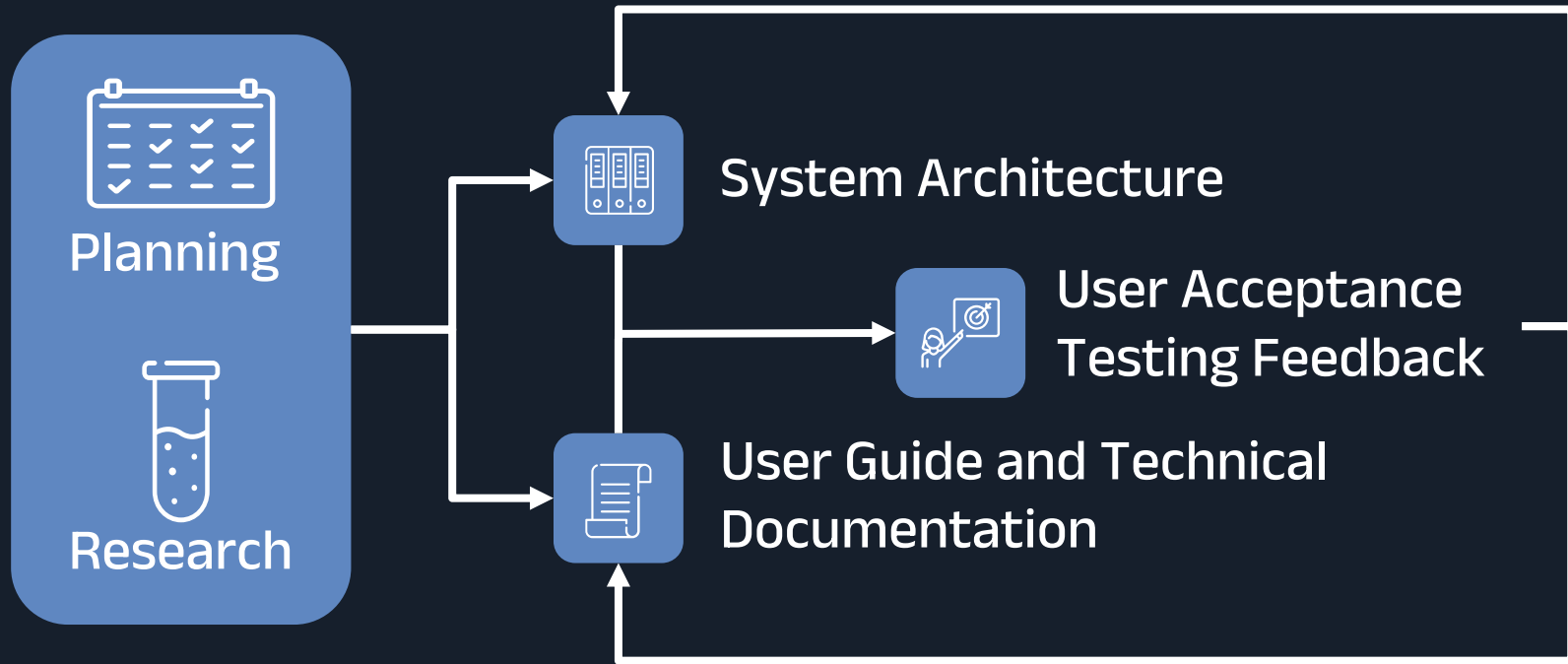Fully customisable with features that match STC's needs

Paving the way: Decision Matrix

Criteria	Data Support	Maintenance and Reliability	Cost	Features and Scalability	User-friendliness	
Weight	20%	15%	15%	25%	25%	Final Score
Tailored	4	2	5	3	5	3.85
Coupler.io	4	4	2	4	3	3.45
Funnel.io	4	4	1	4	3	3.30

Scale 1-5 (ascending)

Design Philosophy: Iterative

Planning

Research

System Architecture

User Acceptance Testing Feedback

User Guide and Technical Documentation

Website Features

Report Generation

Metrics Dashboard

Challenges & Setbacks

Accessing Data sources

⊠ LinkedIn
⊠ Google Ads

Scope & Time

Limiting features to fit development timeframe.

Authentication

Programmatically signing into data sources.

Platform Limitations

Time Range
Rate Limiting
Hosting Provider

Optimisation

Report Generation
Load Times

Restructuring

Adding features as requirements changed.

Regular Progress Debriefs

Features

- Dashboards
- Report Generation
- Authentication

User Interaction

- Accessibility
- Internationalisation

Schedule

- Development Timeline

Challenges Faced

- APIs
- Authentication
- Data sources

Formal Feedback Round

Google Forms

PPTX Feedback
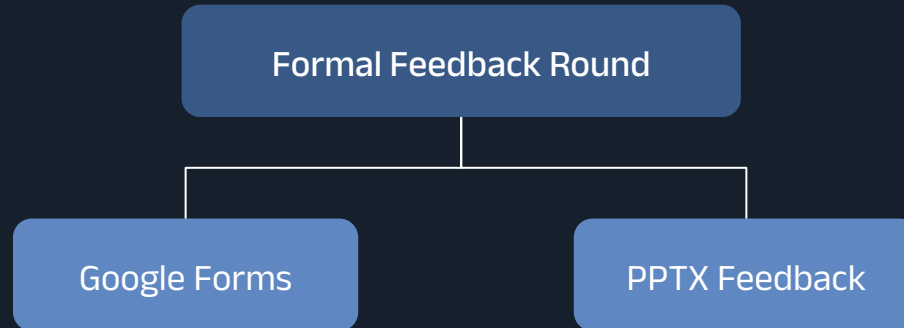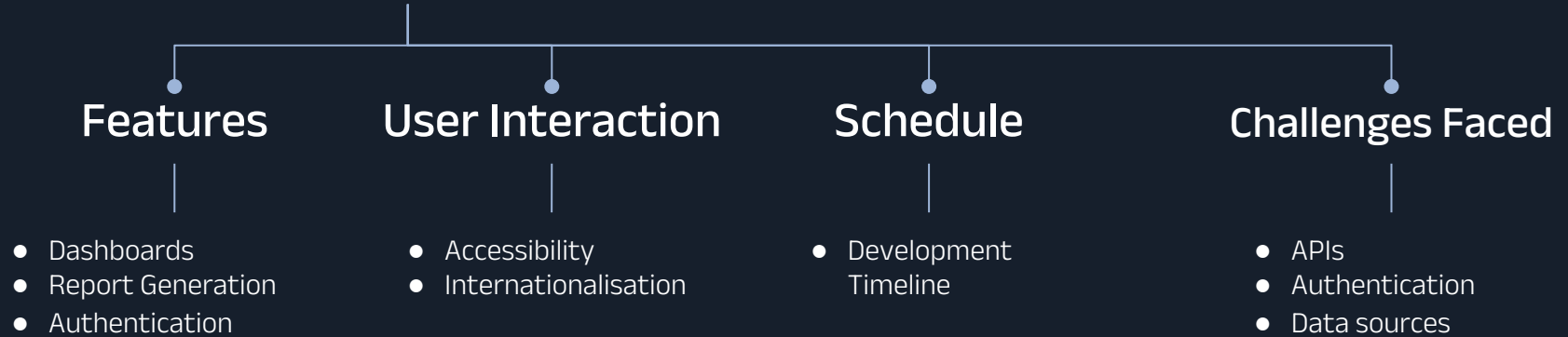
Demonstration

Social Dashboard

Impressions | Reach | Profile Views | Likes | Comments | Shares

Facebook (HKCC) ⬤	**Facebook (STC)** ⬤	**Instagram** ⬤	**YouTube** ⬤
4069	**15768**	**1199**	**5402**
339.08 average per month	1314 average per month	99.92 average per month	450.17 average per month

Impressions

⬇

2600

1950

1300

650

0

Impressions

1-15 Jan 2022 1-15 Feb 2022   1-15 Apr 2022   1-15 Jun 2022 1-15 Jul 2022 1-15 Aug 2022   1-15 Oct 2022   1-15 Dec 2022

Facebook (HKCC) | Facebook (STC) | Instagram | YouTube

User Guide and Technical Documentation

Providing both a walkthrough of the platform and a deep-dive of the technologies implemented.

STC Web Analytics Dashboard

User Manual

Version 1.0

2024-03-01

UM Version 1.0   1   STC Web Analytics Dashboard

If we had more time...

More data sources

LinkedIn, Google Search
Console, Google Ads...

Multiple UAT Rounds

A more polished product
with additional features

Optimisation

Report Generation and
request time

Acknowledgements

Professor Brajendra Mishra

Professor Stephan Sturm
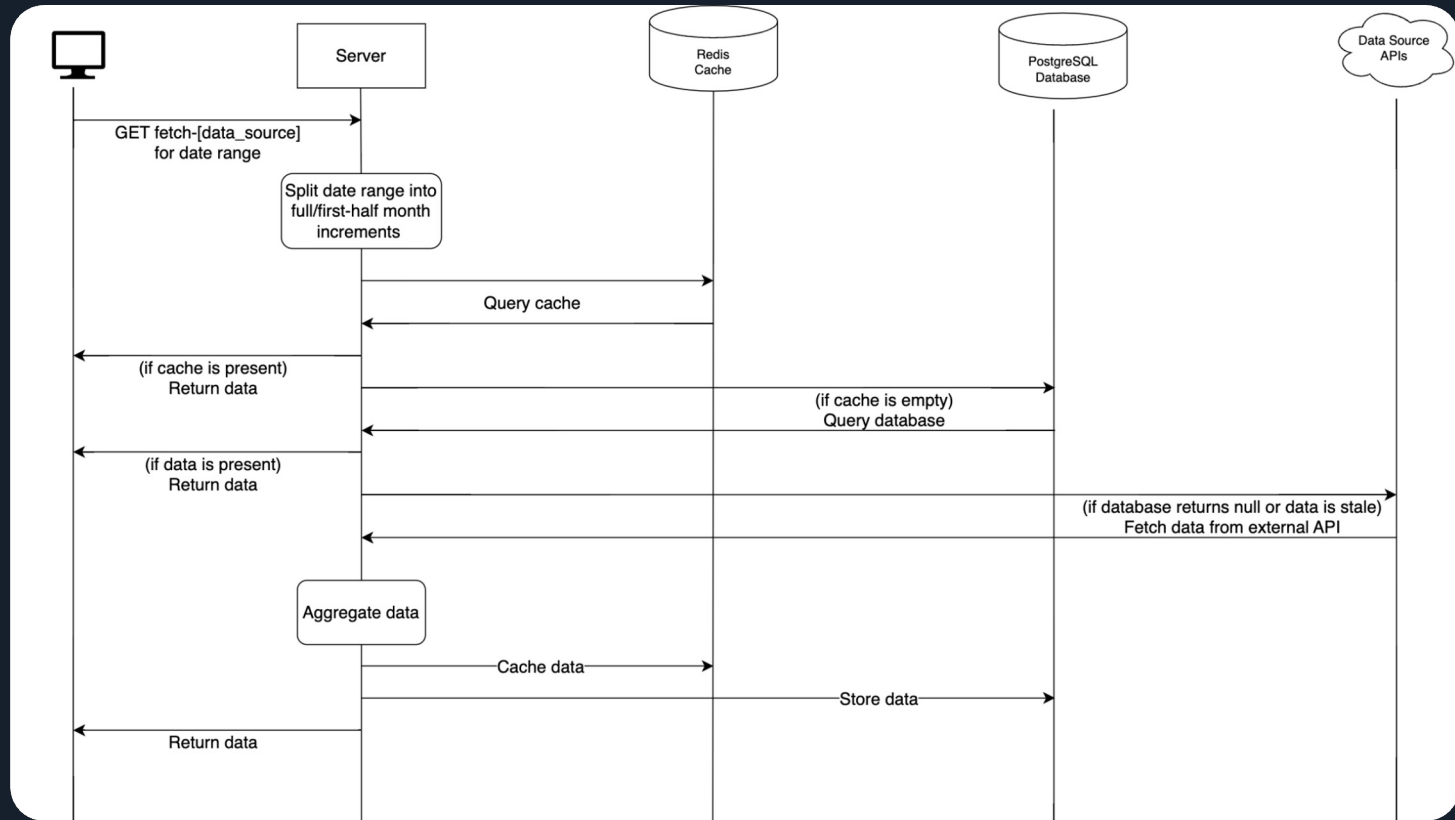
Aster Chiu

Franki Lee

WPI Global Projects Program

Questions?

Thank you for listening!

System Architecture

User Experience Flowchart