Developing Purpose-Built Applications with SAS®

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Purpose-Built Solutions with SAS

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Caesars Entertainment is using SAS® Viya® for charter flight scheduling analytics to increase profitability and save the charter team substantial planning time. Working alongside SAS, Caesars developed a bespoke solution to better schedule aircrafts in the right markets, at the right time, and with the right frequency to increase program profitability.

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Purpose-Built Solutions with SAS

Caesars Charter Flight Scheduling Analytics

Scope

SAS worked with Caesars to understand the business problem, build trust, and answer preliminary questions

Develop

After building confidence, Caesars started using the developing SAS assets to confirm value

Deploy

Deployed purpose-built, end-to-end solution for Caesars

Plans to expand the solution with additional data sources & revenue management refinement

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Prioritize High Performing Flights for Monthly Schedules

Analysis Methodology

How good is a flight?

1. Calculate Revenue per Seat

2. Calculate Market Performance
    - Standardize Revenue per Seat on all non-origin related factors

From where should we fly?

3. Predict Market Performance for future flights

How Good is a Flight?

Total Market Revenue (adj for outliers) / Total Seats
= Revenue per Seat

Flight Example:

- Market: Mid-west origin – west region destination
- Total Market Revenue
  - $100,000
- Total Seats
  - 125
- Revenue per Seat
  - $800

$100,000 / 125 = $800 Revenue per Seat

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How Good is a Flight?

Standardize Revenue per Seat on all non-origin related factors

- Region Code
- Plane Type
- Multi Stop
- Timing
  - Year
  - Month
  - Week
  - Weekend / Weekday
  - New Year's Eve
  - Covid

Examples of differing expectations by various groups compared to grand average of all flights

Month	Revenue per Seat (avg)
April	11% ⬆
November	5.5% ⬇

Plane Type	Revenue per Seat (avg)
Small Plane	29% ⬆
Large Plane	9% ⬇

Weekend vs Weekday	Revenue per Seat (avg)
Weekend	10% ⬆
Weekday	11% ⬇

Region Destination	Revenue per Seat (avg)
West	6% ⬆
South	15% ⬇
Southwest	38% ⬆

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How Good is a Flight?

Flight Example:

- Market: Mid-west origin – west region destination
- Recorded Revenue per Seat
  - $800
- Standardized (Expected) Revenue per Seat
  - $700
  - Expected Revenue per Seat is based on the following attributes:
    - Large plane, in January 2022, direct, weekday flight to west region destination

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How Good is a Flight?

Define & calculate market performance (MP)

Revenue per Seat (adj for outliers) - Standardized (Expected) Revenue per Seat

= Market Performance

<u>Market Performance</u> is the difference of an origin's recorded revenue per seat from what is expected for that specific flight

Flight Example:

- Market: Mid-west origin – west region destination

- Revenue per Seat
    – $800

- Standardized (Expected) Revenue per Seat – historical, average flight expectation regardless of origin
    – Large plane, in January 2022, direct, weekday flight to west region destination
    – $700

$800 - $700 = $100 Market Performance

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How Good is a Flight?

Define & calculate market performance (MP)

Revenue per Seat (adj for outliers) - Standardized (Expected) Revenue per Seat

= Market Performance

Market Performance is the difference of an origin's recorded revenue per seat from what is expected for that specific flight

Flight Example:

- Market: Northeast origin – west region destination

- Revenue per Seat
    – $900

- Standardized (Expected) Revenue per Seat – historical, average flight expectation regardless of origin
    – Small plane, in April 2022, direct, weekend flight to west region destination
    – $975

$900 - $975 = ($75) Market Performance

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From Where Should We Fly?

Predict Market Performance (MP) for **all potential future flights**

- Included in the MP model, origin-specific factors:
  - MP trends by flight attribute
  - Origin-specific interactions
    - Geography
      - Geo-seasonal interactions
    - Frequency
    - Recency

From Where Should We Fly?

Caesars Success

SAS provides us with...

- Trusted results

  We believe in the results. The data is more holistic as well; people don't have to remember to account for one-off or unique scenarios, the logic is consistent, automated, and presented in one usable view. We don't lose anything when there is turnover, it is only a matter of learning how to interpret the results.

- Better decisions

  When we compare program results to before the SAS solution – there were decisions we would have made differently. We could identify markets we would not have selected had we used SAS to show better options.

- Efficiency

  Instead of my scheduler and analysts spending days each month gathering past data into a spreadsheet (with multiple tabs) and adding their own calculations, they can access one inclusive view with automated data updates for the schedule month.

- Ease of use

  I don't have to worry about my schedulers' analytic ability, I just have to present how to read and use the data.

"Accomplishing one version of the truth is helpful and ultimately more profitable for us."

Jeremy Diederich, Vice President Travel Management

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Thank you!

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