The Changing Nature of Sydney Airport

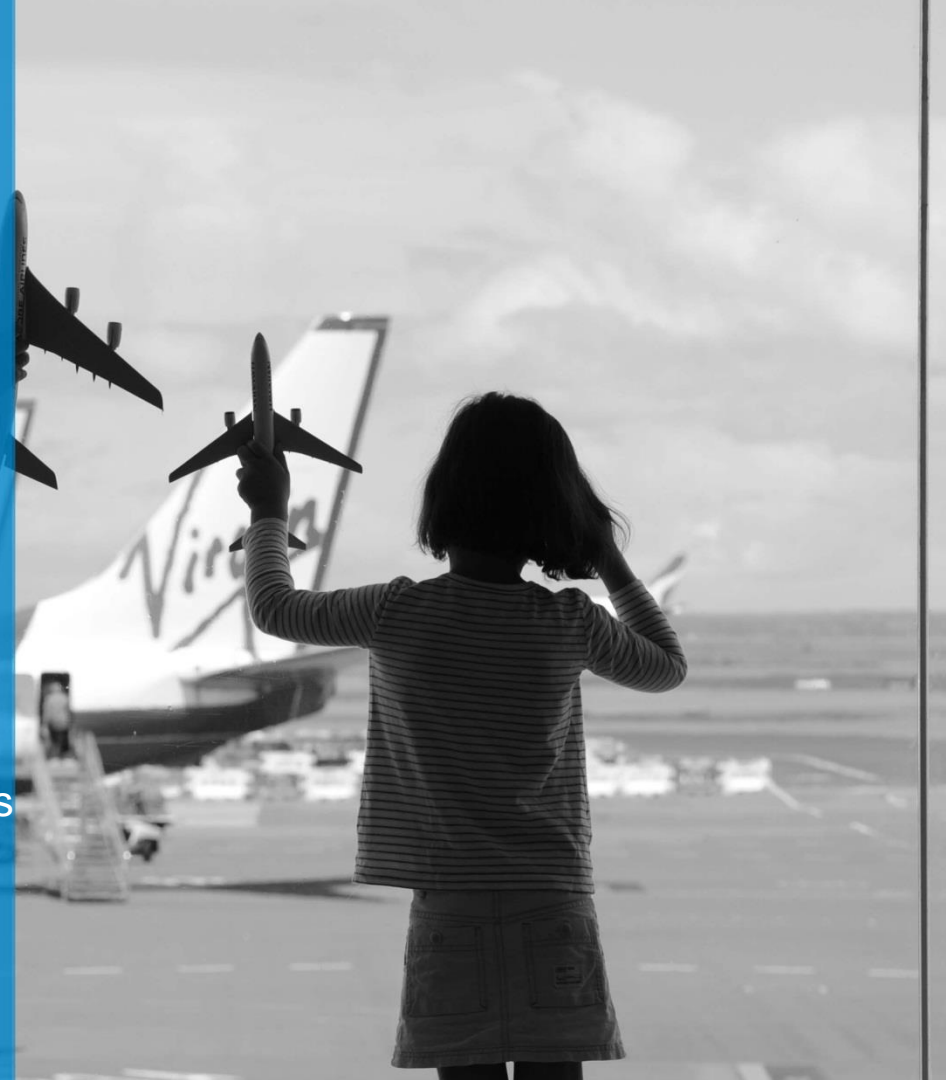## Using Big Data & Analytics to make airports smarter

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Sydney Airport The right future.
Starting now.

Disclaimer

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Sydney Airport

- Located 8km south of Sydney's CBD

- Around 38 million passengers per year

- 40 airlines serving close to 100 destinations

- International gateway to Australia catering to more than 40% of all international arrivals

Sydney Airport Vision

"To deliver a world class airport experience and foster the growth of Sydney Airport for the benefit of Sydney, New South Wales and Australia."
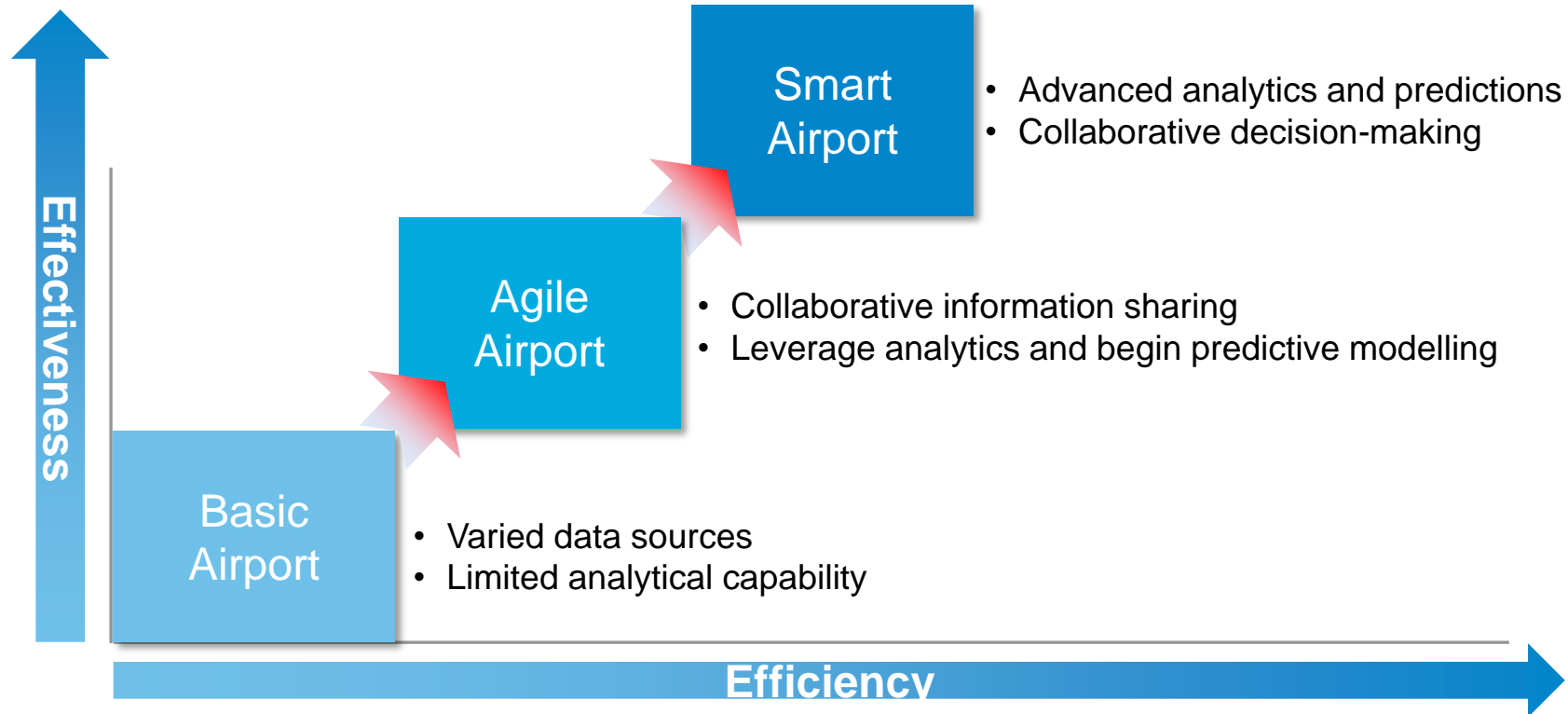
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Strategic roadmap

Effectiveness (vertical axis)

Smart Airport
- Advanced analytics and predictions
- Collaborative decision-making

Agile Airport
- Collaborative information sharing
- Leverage analytics and begin predictive modelling

Basic Airport
- Varied data sources
- Limited analytical capability

Efficiency (horizontal axis)

Enabling the transformation to a Smart Airport

Predicting passenger numbers

Improving operational efficiency

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Becoming a World Class Airport

The challenge

Month-end passenger forecast for airport planning

Original process

- Manual

- Time-consuming

- Subjective

- Not transparent

- Some variance to actuals

- Lacks granularity

The solution

Implemented a predictive Proof of Concept

- Historical Data series as a starting point

- Leverage near time data as supplement

- Definition of inputs and target outputs

- Event and seasonal timing information to adjust for public holiday periods and alike

- Reviewed, tested and agreed best approach for usage and analysis

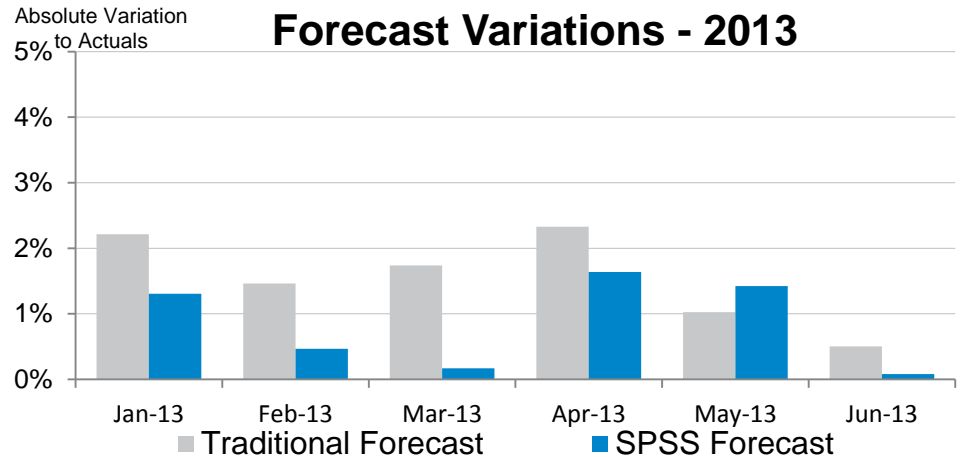- Required predictions at a granular, terminal level

The results
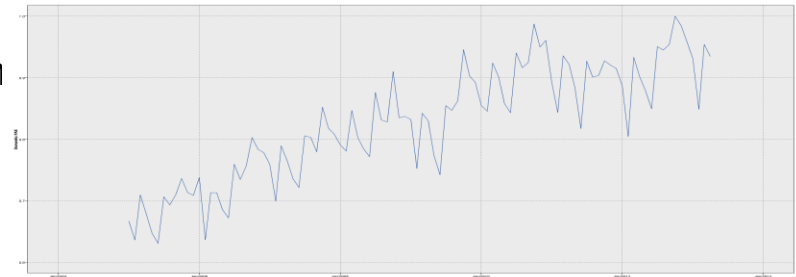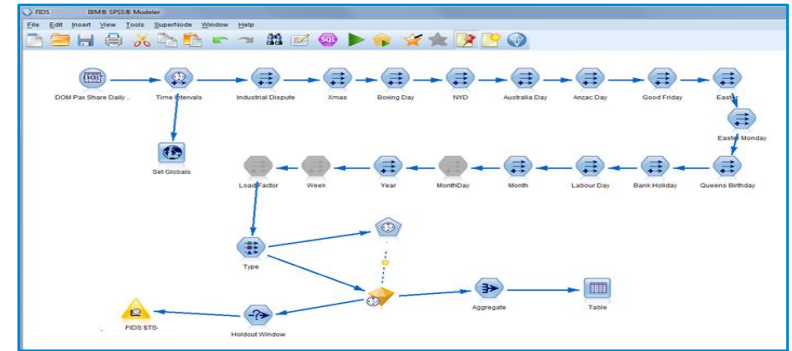
Improved forecast accuracy and time-savings

Benefits achieved

- Vastly improved forecast accuracy

- Improved timeliness of information

- Improved operational efficiencies

- Reduction of manual processes

- Increased automation

Forecast Variations - 2013

Absolute Variation to Actuals

Legend: Traditional Forecast, SPSS Forecast

Months: Jan-13, Feb-13, Mar-13, Apr-13, May-13, Jun-13

Passenger impact on Car Parking

Improving the customer experience

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Our goal

To transform our car park business based on a deeper understanding of our customers

- Offer relevant parking products

- Provide improved parking offers that customers value

- Improve the parking amenities

- Increase the efficiency of our car parks

The question

How do passenger volumes impact Car Parking?

- Which passengers park more?

    - When?

    - How often?

- Use of parking products

- Customer preferences by carrier

- Predictability of future usage?

    - By time

    - By product

    - By terminal

The solution
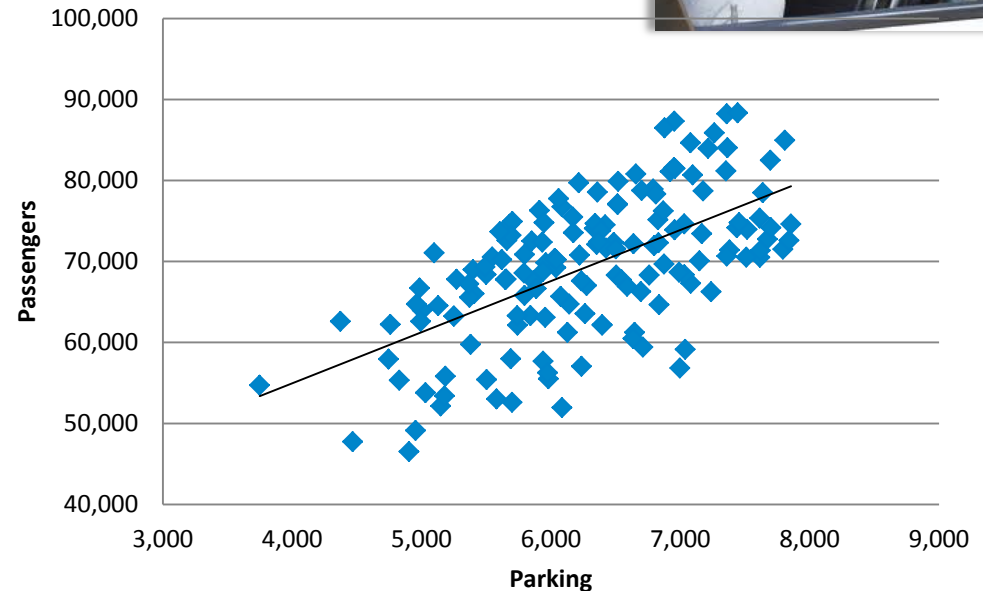
## Deep interrogation of car parking data

- Historical data series as starting point

- Leverage near time data to supplement

- Definition of inputs and targets

- Adjust for seasonality and day of week

- Reviewed, tested and agreed best approach for analysis

- Predictions at a granular level, by product, terminal and time
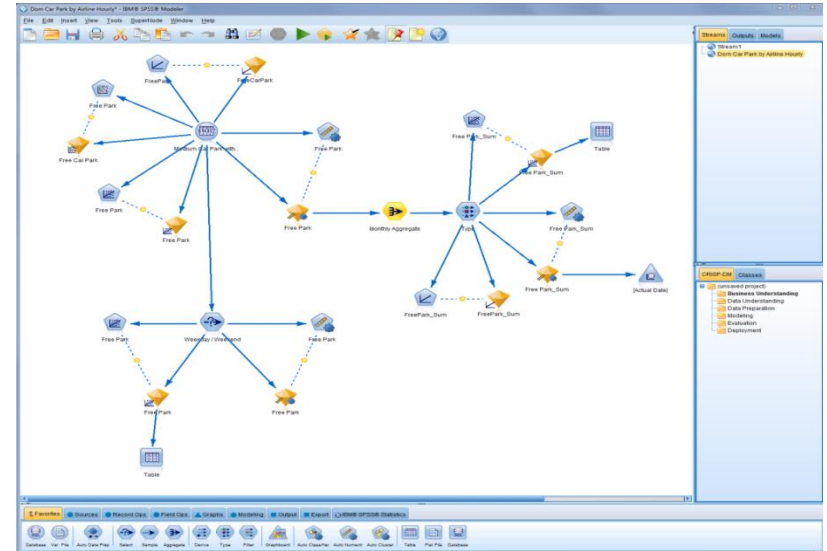
## Identify and predict key influencing factors on parking and parking products

Business outcomes

- Improved forecasting capability

- Enhanced product development

- Improved planning

- Improved strategic decision making

- Deeper understanding of parking behaviour

Becoming a smart airport
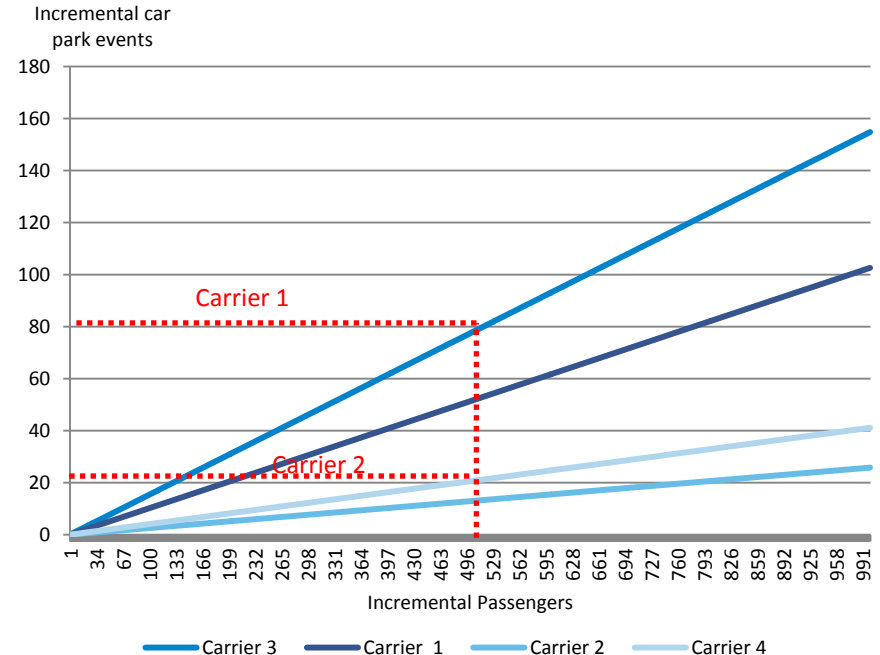
Predictive Analytics as a tool in transformation to a smart Airport

- Large volume and availability of data

- Growing analytic capabilities

- Requirement for continuous improvement

- Growing collaboration within the aviation industry

- Wide gamut of tools available
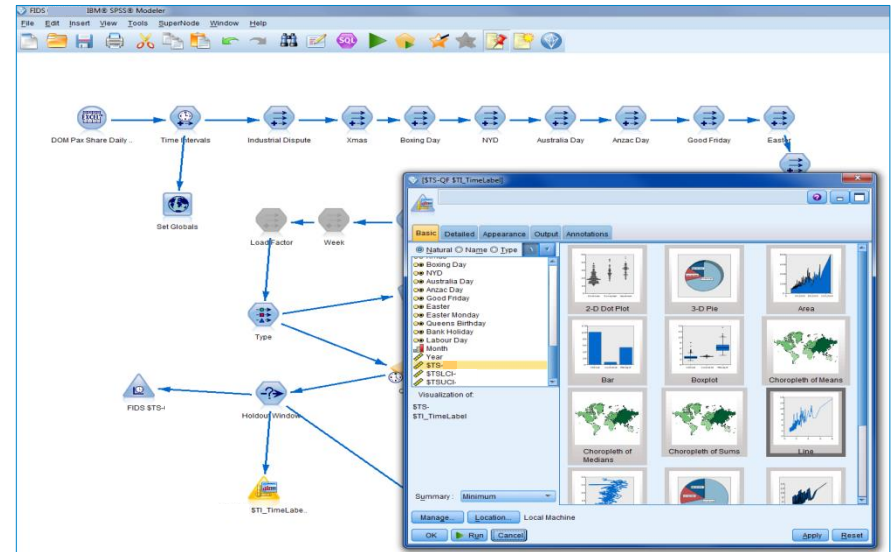
Thank you
for your attention

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