Using Multiple Airport City (MAC) Functionality in Forecasting

Multiple Airport City

- Purpose: Create city demand and shares by combining airport-specific market sizes and QSI
- Combine airport-based Market Sizes into city Market Sizes
- Combine airport networks into a city network
  - Networks constructed at airport level to prevent inter-airport connections
- Calculate share using 5 variable QSI
  - Nonstop proximity penalty between airports
  - Elapsed time penalty between airports
- Calculate city Route Presence
  - Sum airport O&D QSI to city level
- Calculate city Airport Presence
- Sum airport O&D revenue (market * average fare) to city level
- Calculate Airport Preference within a city by O&D

Numerical Examples

Multiple Airport City

(Single MAC Example)

MAC File Contents (Example):

City	Airport	Point of: Origin	Point of: Destination
WAS	BWI	1.0	1.1
	DCA	1.3	2.0
	IAD	1.0	1.1

MAC QSI Example:

Market	Airline	Origin	Unweighted MAC Preference QSI Points	MAC Share	MAC Factor: Origin	MAC Factor: Destination	Weighted MAC Preference QSI Points	MAC Share
BWI-TPA	XX	BWI	100	33%	1.0		100	28%
		TPA	100	33%		1.1	110	22%
DCA-TPA	YY	DCA	200	67%	1.3		260	72%
		TPA	200	67%		2.0	400	78%
Total		WAS	300	100%			360	100%
		TPA	300	100%			510	100%
Total	YY	TPA		67%				78%
		WAS		67%				72%
	XX	TPA		33%				22%
		WAS		33%				28%

Multiple Airport City

(Double MAC Example)

MAC File Contents (Example):

City	Airport	Point of: Origin	Point of: Destination
WAS	BWI	1.0	1.1
	DCA	1.3	2.0
	IAD	1.0	1.1
NYC	EWR	1.0	1.1
	JFK	1.0	1.1
	LGA	1.4	2.1

MAC QSI Example:

Market	Airline	Origin	Unweighted MAC Preference QSI Points	MAC Share	MAC Factor Origin	MAC Factor Destination	Weighted MAC Preference QSI Points	MAC Share
BWI-EWR	ZZ	BWI	100	33%	1.0	1.1	110	17%
		EWR	100	33%	1.0	1.1	110	16%
DCA-LGA	YY	DCA	200	67%	1.3	2.1	546	83%
		LGA	200	67%	1.4	2.0	560	84%
Total		WAS	300	100%			656	100%
		NYC	300	100%			670	100%
Total	YY	NYC		67%				84%
		WAS		67%				83%
	ZZ	NYC		33%				16%
		WAS		33%				17%