



**RED LION**<sup>®</sup>  
HOTELS



# **A Robust Nonlinear Fluid Model of Dynamic Pricing and Inventory Control with no Backorders in a Local Level Micro Market Economy**

**Paul Chappelle, Director of Revenue Strategy, CHA, CRME**  
**January 11, 2012**  
**Olympia, Washington**



## **Demand Forecasting and Pricing**

**Paul Chappelle, Director of Revenue Strategy, CHA, CRME**  
**January 11, 2012**  
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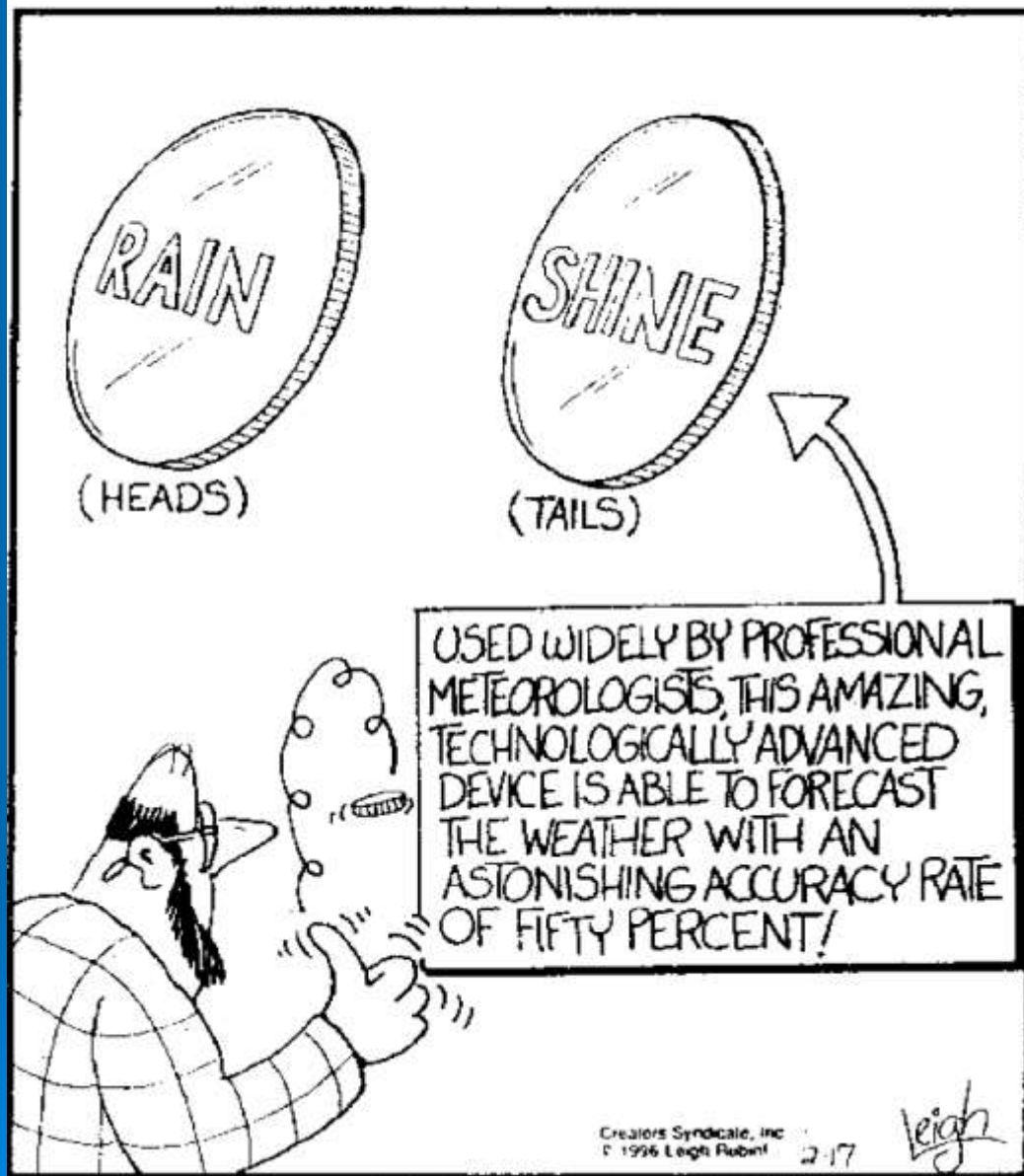
# DEMAND FORECASTING

Constrained Demand – Demand that we see

Unconstrained Demand – Demand we don't see



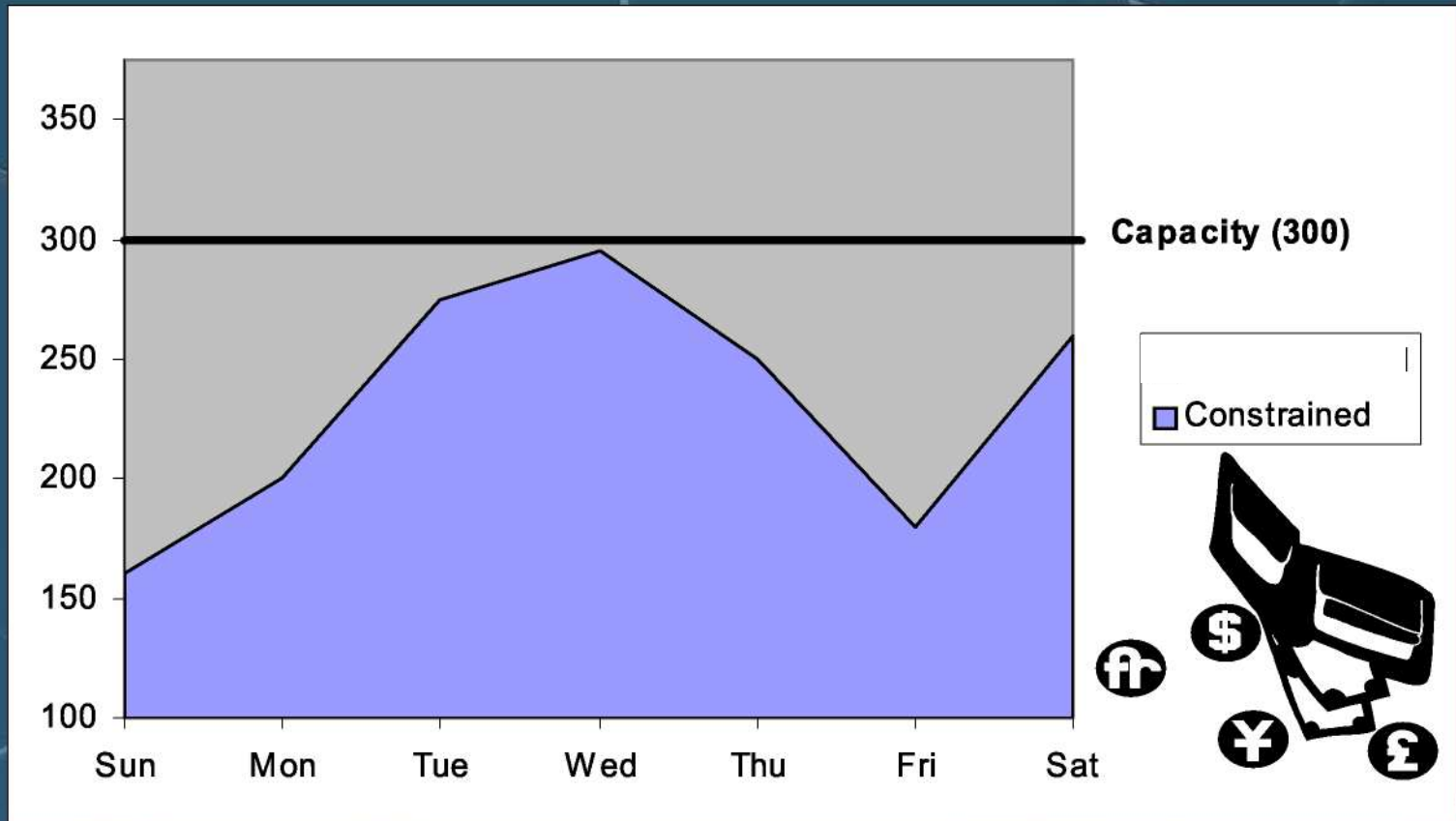
# RUBES *by LEIGH RUBIN*



# DEMAND FORECASTING

## Constrained Demand

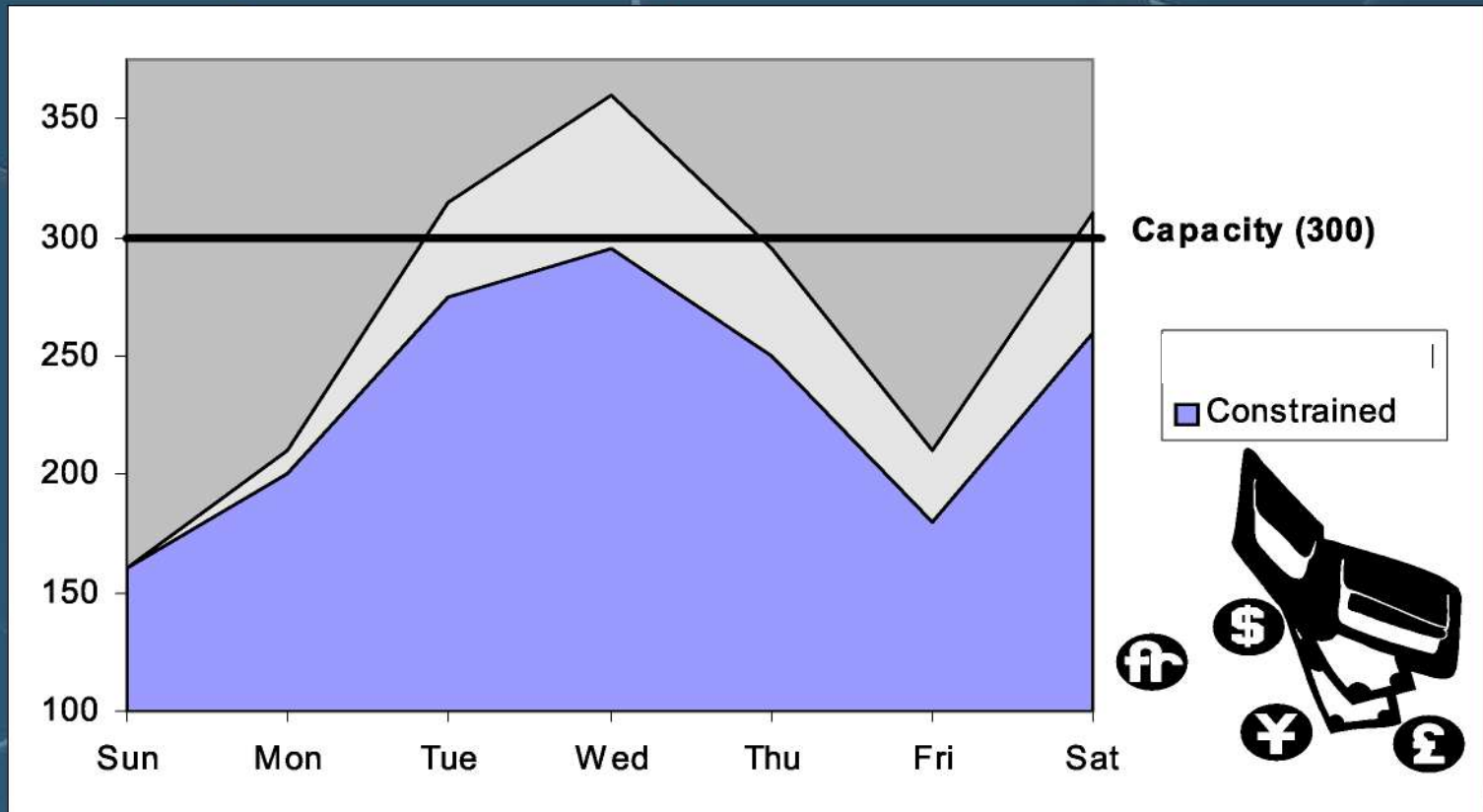
The Demand that we see.



# DEMAND FORECASTING

## Unconstrained Demand

The Demand that we don't see.



# DEMAND FORECAST

## Tactical Decisions

- The Forecast provides hoteliers with the ability to implement various revenue management strategies based on the forecast such as:
  - \* Specific rate offers
  - \* Availability controls
  - \* Rate restrictions
  - \* Overbooking and/or overselling strategies
- It also provides information to help make decisions such as where, when and what type of marketing efforts are needed, and when to do renovations or other special projects.
- Schedules for the various departments in the hotel are created based on the operational forecast.
- Without an accurate forecast, it is very difficult to arrive at the proper tactical decisions required to operate the hotel.

# DEMAND FORECAST


## The Approach

Building a forecast does require careful evaluation of historical activity and current booking trends. Some of the critical elements to consider and review for the forecast are:

Room nights	Revenue
Revenue	RevPAR
Lead time/Booking pace by segment	Cancellations
No shows (both guaranteed and non-guaranteed)	Transient rooms
Group rooms	Arrivals
Departures	Walk-ins
Extended stays	Early departures
Denials/Regrets *	Length of stay pattern
Demand generators	Transient group mix and group wash
Rate changes	On the books bookings

# REVENUE STRATEGY

## Revenue per Available Customer Value

- Total spending at the hotel during the stay
  - Seasonal or day-of-week stay patterns
  - Cost of the booking venue of choice
  - Cost of sale
  - Group History
- 

# REVENUE STRATEGY

## Other things to consider

- 3<sup>rd</sup> Party Constraints
- Local Events
- Special Events



# REVENUE STRATEGY

## 3<sup>rd</sup> Party Constraints

- Published Per Diem Rates
  - <http://www.gsa.gov/portal/category/21287>

Items not appearing below may be located within a county for which rates are listed.  
 To determine what county a city is located in, visit the [National Association of Counties \(NACO\) website](#) (a non-federal website).

You searched for: **Washington**

Primary Destination* (1)	County (2, 3)	Max lodging by Month (excluding taxes)												Meals & Inc. Exp.**
		2011			2012									
		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
Standard Rate	Applies for all locations without specified rates	77	77	77	77	77	77	77	77	77	77	77	77	46
Anacortes / Coupeville / Oak Harbor	Skagit, Island, San Juan	89	89	89	89	89	89	89	89	89	89	89	89	61
Everett / Lynnwood	Snohomish	96	96	96	96	96	96	96	96	96	96	96	96	61
Ocean Shores	Grays Harbor	97	97	97	97	97	97	97	97	97	117	117	97	51
Olympia / Tumwater	Thurston	88	88	88	88	88	88	88	88	88	88	88	88	61
Port Angeles / Port Townsend	Clallam and Jefferson	93	93	93	93	93	93	93	93	93	123	123	93	61
Richland	Benton	93	93	93	93	93	93	93	93	93	93	93	93	46
Seattle	King	137	137	137	137	137	137	137	137	137	137	137	137	71
Spokane	Spokane	87	87	87	87	87	87	87	87	87	87	87	87	61
Tacoma	Pierce	105	105	105	105	105	105	105	105	105	105	105	105	61
Vancouver	Clark, Cowlitz and Skamania	113	113	113	113	113	113	113	113	113	113	113	113	56

\* NOTE: Traveler reimbursement is based on the location of the work activities and not the accommodations.

\*\* Meals and Incidental Expenses, see [Breakdown of M&IE Expenses](#) for important information on first and last days of travel.

CONTACTS

Additional Contacts for

- Travel Management Policy

NEED MORE INFORMATION?

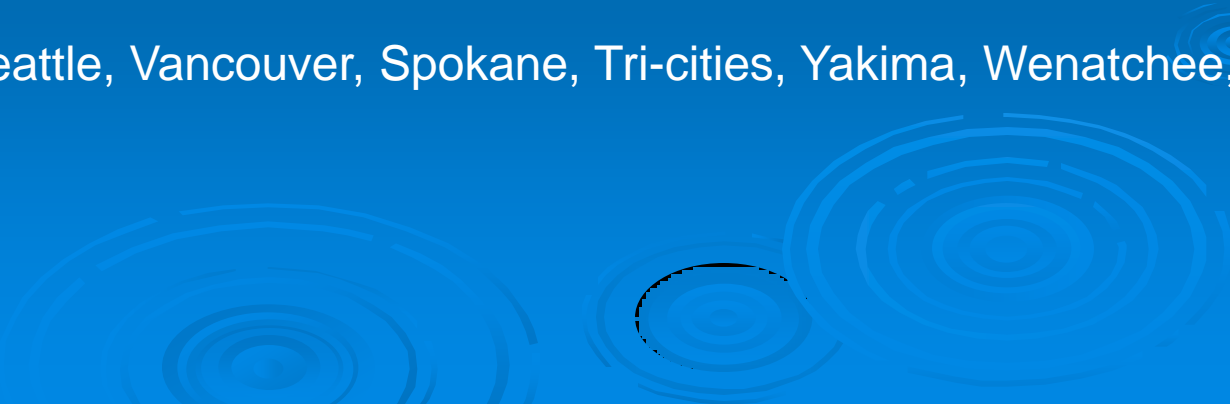
- Rates for Alaska, Hawaii, U.S. Territories and Possessions (set by DoD)
- Rates in Foreign Countries (Set by State Dept)

RELATED TOPICS

- Travel Resources
- E-Gov Travel
- FedRooms
- POV Mileage Reimbursement Rates

# REVENUE STRATEGY

## Local Events

- Seattle – Seafair
  - Spokane – Bloomsday, Hoopfest
  - Washtucna – Belt buckle and Chew Can Festival
  - Vancouver – Mold and Fungus Festival
  - Olympia – Evergreen State College Graduation (Really?)
  
  - Citywide conventions
    - Seattle, Vancouver, Spokane, Tri-cities, Yakima, Wenatchee, etc.
- 

# REVENUE STRATEGY

## Special Events

- Superbowl





Plan ahead and Save up to **20%**

[SEE DETAILS](#)

## Best hotels found in Indianapolis (and vicinity)

BOOK ONLINE OR CALL  
800-391-3613

Most Popular


Price


Guest Rating

Star Rating

**Sale** • Early Booking Bonus—Save 20% on Your Hotel Stay

### Baymont Inn Greenwood

★★★★☆ | 3.4 out of 5  22 reviews

Greenwood | [Map](#) 

1-866-264-5744


~~\$600~~ **\$480**

avg/night

Expedia Special Rate

[SEE DETAILS](#)

### Value Place Lawrence

Indianapolis (East Indianapolis) | [Map](#) 

1-866-267-9053

Rooms may be available

[SEE DETAILS](#)

### Oakwood At Gardens Of Canal Co

Indianapolis (Downtown Indianapolis) | [Map](#) 

1-866-272-4856

Rooms may be available

[SEE DETAILS](#)

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### HOTEL SEARCH

Find hotels near:

Where are you going?

Check-in:  Check-out:

Rooms:  Adults:  Children:

Rm 1:

**SEARCH FOR HOTELS**

### FILTER RESULTS

Hotel Name Contains  
 **GO**

Price (Avg. per night) ▲

Less than \$75  
 \$75 to \$124  
 \$125 to \$199  
 \$200 to \$299  
 \$300 +

Star Rating ▲

★★★★★ 5 stars

## 3 matching hotels found in Indianapolis (and vicinity)

(out of 224)

BOOK ONLINE OR CALL  
800-391-3636

SORT BY: **Most Popular** Price Guest Rating Star Rating



**Baymont Inn & Suites**  
 ★★★★★ | 4.6 out of 5 | 5 reviews  
 Indianapolis (East Indianapolis) | Map  
 1-866-264-5744

**\$89**  
 avg/night  
 Expedia Special Rate

**SEE DETAILS**



**Baymont Inn Greenwood**  
 ★★★★★ | 3.4 out of 5 | 22 reviews  
 Greenwood | Map  
 1-866-267-9053

**\$70**  
 avg/night  
 Expedia Special Rate

**SEE DETAILS**



**Baymont Indianapolis**  
 ★★★★★ | 3.4 out of 5 | 37 reviews  
 Plainfield (Plainfield) | Map  
 1-866-272-4856

**\$59**  
 avg/night  
 Expedia Special Rate

**SEE DETAILS**

# What is Elasticity?

$$\text{elasticity} = \left| \frac{\text{percentage change in demand}}{\text{percentage change in price}} \right|$$

$$e = \left| \frac{\Delta d / d}{\Delta p / p} \right|$$

# Calculating Elasticity, Example

If the price of a hotel room goes up by 1%, and as a result sales fall by 1.5%, the price elasticity of demand for this good is  $-1.5\%/1\% = -1.5$ .

- Thus, price elasticity measures responsiveness of quantity demanded to changes in price.
- Price elasticity greater than 1 is called price elastic
- Price elasticity less than 1 is called price inelastic.

➤ Questions?



# Thank you!!!

Paul Chappelle, CHA, CRME

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