Three45 Golf Association Study

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www.three45golf.org

THREE 45 Golf Association
advocates for a quicker pace of play

- Three Main Categories of Pace Factors
- Golfer Behaviors
  - Walking Speed
  - Moving Directly to Own Ball
  - Being Ready to Hit
- Course Conditions
  - Difficulty Factors
  - Hole Combinations
  - Course Set Up
- Management
  - Tee intervals
  - Pace Monitoring
  - Ranger Behavior
  - Par 3 Wave Up

WHY YOU SHOULD READ THIS BOOK:

"This book explains why the pace of play in America is out of control and lays out a comprehensive plan to correct the problem. If you care about golf's pace of play, this is a must read."

-Bob Carney

Golf Digest

"Every Club Pro and every Club President, not to mention every golfer who tees it up, should study this book and follow it's teachings. Our club follows the Principles and our pace of play is among the best in the country."

-Brad Worthington

Head Pro, Brooklawn Country Club

President, MET Section, PGA of America

THREE/45
GOLF ASSOCIATION

Barcode Area

We will add the barcode for you.

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GOLF'S
PACE OF PLAY
BIBLE

A Practical Guide and Plan for Improving Golf's Pace of Play
And the Science Behind It

Presented By The Three/45 Golf Association

Lucius Riccio Ph.D.

Three/45 Golf Association

- **Research on Pace of Play**
  - Data Analysis Study
  - Simulations
- **Implementation**
  - Marine Park Golf Course Brooklyn USA
- **Optimized Tee Intervals**
- **Advanced Research on Course Design**
- **Three/45 Golf Association Program for Improvement**

Pace of Play Data Study

- Study of 175 Courses in America
- 40,460 Rounds
- First Study to Use GPS Data
- Data Supplied by GPS Industries
- Time to Play 18 Holes from GPS Data

- Average Pace – 4 Hours 17 Minutes

- Compare to Previous Self-Reported Studies:
  - 1989 PGA of America: 4:15
  - 2011 PGA/GCSMAA/CMAA: 4:14
  - 2012 NGF: 4:16
  - PGA Tour TPC Study:
    - Private: 4:10
    - Public: 4:30

Three45 Findings

- ## Morning Rounds Faster
  - Morning Average: 4:02
  - Afternoon Average: 4:21

- ## Weekday Rounds Faster
  - Weekday (M-Th) Average: 4:13
  - Weekend (F-Su) Average: 4:23

- ## First Round of the Day Fastest
  - All Clubs Average: 3:46

Three45 Findings

- 28.5% of all rounds under 4 Hours
- 36.5% over 4:30 with 10.4% over 5 Hours
- 18.8% of courses AVERAGE under 4 hours
- **5 Fastest Courses – Private Clubs**
- **5 Slowest – Public Facilities**

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Three45 Findings

- Length of Course: Mildly Related
- Slope Rating: Not Significantly Related
- BUT Number of Rounds: Statistically Significant Correlation

- **Good News: Average Time Unchanged**

  – Bad News: Average Time Unchanged

- **Good News: All Courses First Round Fast and Overall 25% of Rounds Under 4 Hours**

  – Bad News: All Other Rounds Slower

- **Good News: Distance Not the Problem**

  – Bad News: Play It Forward May Not Help

Implications

- **Pace Is More of a Public Facility Problem**
- **Private: Shot Waiting Time May Be a Bigger Problem than Overall Time to Play**
- **Most Important: Success is Possible**
  - Some courses have good average times
  - ALL Courses have some fast times
  - Management is perhaps the biggest problem

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Do Results Make Sense?

- Compare: Computer Based Simulations
- Input Playing Speed of Groups
  - Walking/Moving Speed
  - Tee/Fairway/Green Clearing Times
- Input Tee Time Interval
- Simulate Full Day
- Groups Play 18 Holes on Hypothetical Course

Simulation Results - Obvious

- Slow Group Sets Pace
- Walking/Moving Pace Important
- Shot/Green Clearing Time Very Important
- Important For Unobstructed Group

Simulation Results - Important

- Not Obvious: **Tee Interval Maybe More Important**

- Individual/Group Behaviors Maybe Less Consequential

- "Hurry Up and Wait" Problem

- "Blame the Group Ahead" Problem

- Confirms Study Results

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Other Findings

- Hole to Hole Variation Compounding
- Group to Group Variation Compounding
- More Variation: Longer Play Times
- Variation Doesn't Cancel – It Compounds

Summary

- **Time to Complete 18 Holes**
- Tee Interval   Walking Speed MPH
                    (Yards/Min)
-                           3 (88)   2.0 (60)

- 10 Min   4:00   4:40
- 9 Min   4:20   5:00
- 8 Min   4:45   5:25
- 7 Min   5:15   5:55

Summary

- **Time to Complete 18 Holes**
- Tee Interval   Green Clearing Time
-                        3 Min   4 Min
- 10 Min   4:00   4:20
- 9 Min   4:20   4:50
- 8 Min   4:45   5:20
- 7 Min   5:15   5:50

Other Findings

- Hole to Hole Variation Compounding
- Group to Group Variation Compounding
- More Variation: Longer Play Times
- Variation Doesn't Cancel – It Compounds

Example
Marine Park

- Brooklyn, USA
- Pace of Play? Forgetaboutit!
- Full Length Championship Course
- Robert Trent Jones Design
- Links-Style Near the Ocean

Implementation

- Marine Park Golf Course Brooklyn, USA
- Implemented Player Instructions
- Implemented Time Clocks
- Implemented Ranger Training

- Results: Limited/Mixed
- Tee Intervals Unchanged!

PACE O

SUGGESTED
COMPLETE FR
2 HOURS 15 M

MARINE PARK
GOLF COURSE

Golf Cart Rules

1) Carts must stay on cart paths around tees and greens
2) Do not drive carts in fescue or recently seeded areas
3) Repair all ball marks and divots

Three/45Golf – **Pace of Play**

Our goal is to:
Clear the tee box, fairway landing area or green in **3 minutes**

Do not take more than **45 seconds** to plan, address or hit your shot

Do not look for an errant ball for more than **3 minutes**

Do not take more than **45 seconds** to putt out, all putts

- Limited/Mixed
- Morning Rounds Showed Improvement
  - Front 9 under 2 hours
  - Overall Under 4:10
- Afternoon Rounds Stayed Long
  - As Course Fills Up
- By 4th Hour Times Creep Up
  - 3 to 4 Minutes Extra per Group
  - By 6th Hour – 4:40 to 4:50

- Collect More Data
- Focus on Specific Holes
- Focus on Green Clearing Times
- Focus on Time of Day
- Test Different Instructions

Summary: Causes

- ## From Study
  - Tee Intervals

- ## From Simulations
  - Tee Intervals/Factor Combination

- ## From Marine Park
  - Tee Intervals and/or Group Pace

Conclusion

- Must Get Tee Interval Right First
- Then Green Clearing Times
- Then Walking Speed/Individual Management

Tee Intervals

- **Public Courses Predicament**
  - Maximize Revenue
  - Please As Many as Possible (Voters)

- **Kimes'/Riccio's Findings**
  - Revenue Maximized at 8 Min Intervals
  - 8 Min Intervals Result in Slow Play
  - 15% Less revenue with 10 Min Intervals

Tee Interval vs. Play TIme

- **Tee Time Interval Total Number of Groups**
  - 14   42.9
  - 13   46.1
  - 12   49.5
  - 11   52.8
  - 10   55.8
  - 9   58.1
  - 8   59.2
  - 7   58.4

Model to Optimize Tee Intervals

- Utilizations Highest Mornings/Weekends (85-90% Utilization)

- Lowest Weekday Afternoons (40-60% Utilization)

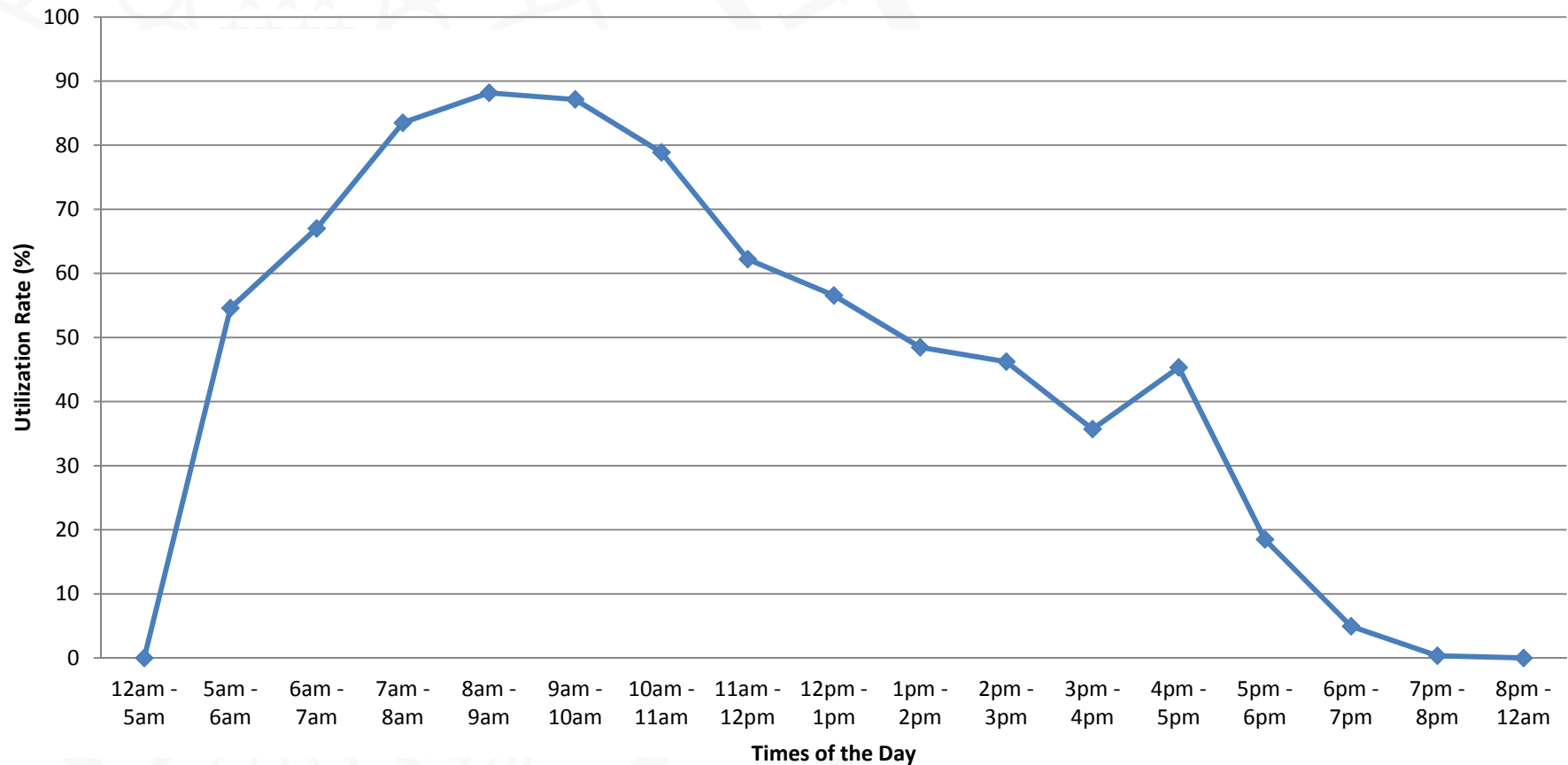- Want "Revenue-Neutral" and "Number of Rounds-Neutral" Plan

Model

- Assume "Elasticity"
- Increase Morning Rates
- Reduce Afternoon Rates
- Alternate: Pay More for Morning But Credit for An Afternoon Round

Marine Park Data

	JulyUtilization	July Total Rounds Avail.	July Total Rounds Filled	JulyTotal Rounds Unfilled	JuneUtilization	JuneTotal Rounds Avail.	JuneTotal Rounds Filled	JuneTotal Rounds Unfilled	MayUtilization	MayTotal Rounds Avail.	MayTotal Rounds Filled	MayTotal Rounds Unfilled
		July		10 days		June		30 days		May		31 days
	Utilization	Total Rounds Avail.	Total Rounds Filled	Total Rounds Unfilled	Utilization	Total Rounds Avail.	Total Rounds Filled	Total Rounds Unfilled	Utilization	Total Rounds Avail.	Total Rounds Filled	Total Rounds Unfilled
12am - 5am	0.0%	-	-	-	0.0%	-	-	-	0.0%	-	-	-
5am - 6am	62.9%	132	83	49	51.6%	461	238	223	54.8%	292	160	132
6am - 7am	87.5%	284	248	36	72.8%	915	667	248	54.8%	916	503	413
7am - 8am	89.4%	265	237	28	87.1%	876	762	114	78.1%	899	703	196
8am - 9am	95.2%	292	278	14	89.0%	848	756	92	85.1%	931	794	137
9am - 10am	78.5%	310	243	67	94.9%	851	807	44	82.4%	943	776	167
10am - 11am	75.6%	308	233	75	88.8%	667	594	73	70.3%	899	632	267
11am - 12pm	58.8%	296	174	122	67.5%	744	502	242	58.2%	929	541	388
Sums		**1887**	**1496**	**391**		**5362**	**4326**	**1036**		**5809**	**4109**	**1700**
Avg Utilization	**79.3%**				**80.7%**				**70.7%**			
12pm - 1pm	41.1%	299	123	176	63.1%	758	476	282	55.2%	940	519	421
1pm - 2pm	36.9%	281	104	177	52.9%	869	460	409	47.9%	892	427	465
2pm - 3pm	40.1%	287	115	172	55.0%	918	504	414	39.7%	949	378	571
3pm - 4pm	25.8%	320	83	237	42.0%	952	400	552	32.8%	953	314	639
Sums		**1187**	**425**	**762**		**3497**	**1840**	**1657**		**3734**	**1638**	**2096**
Avg Utilization	**35.8%**				**52.6%**				**43.9%**			
4pm - 5pm	27.6%	319	88	231	52.2%	955	498	457	44.4%	943	419	524
5pm - 6pm	12.8%	320	41	279	24.8%	960	239	721	14.2%	953	135	818
6pm - 7pm	2.2%	320	7	313	9.2%	935	86	849	1.7%	952	16	936
7pm - 8pm	0.0%	40	0	40	0.8%	120	1	119	0.0%	84	0	84
8pm - 12am	0.0%	-	-	-	0.0%	-	-	-	0.0%	-	-	-
Sums		**999**	**136**	**863**		**2970**	**824**	**2146**		**2932**	**570**	**2362**
Avg Utilization	**13.6%**				**27.7%**				**19.4%**			

Shift of Demand

Weighted Average Utilization Rates for Marine Park Golf Course Summer Data (May - July)
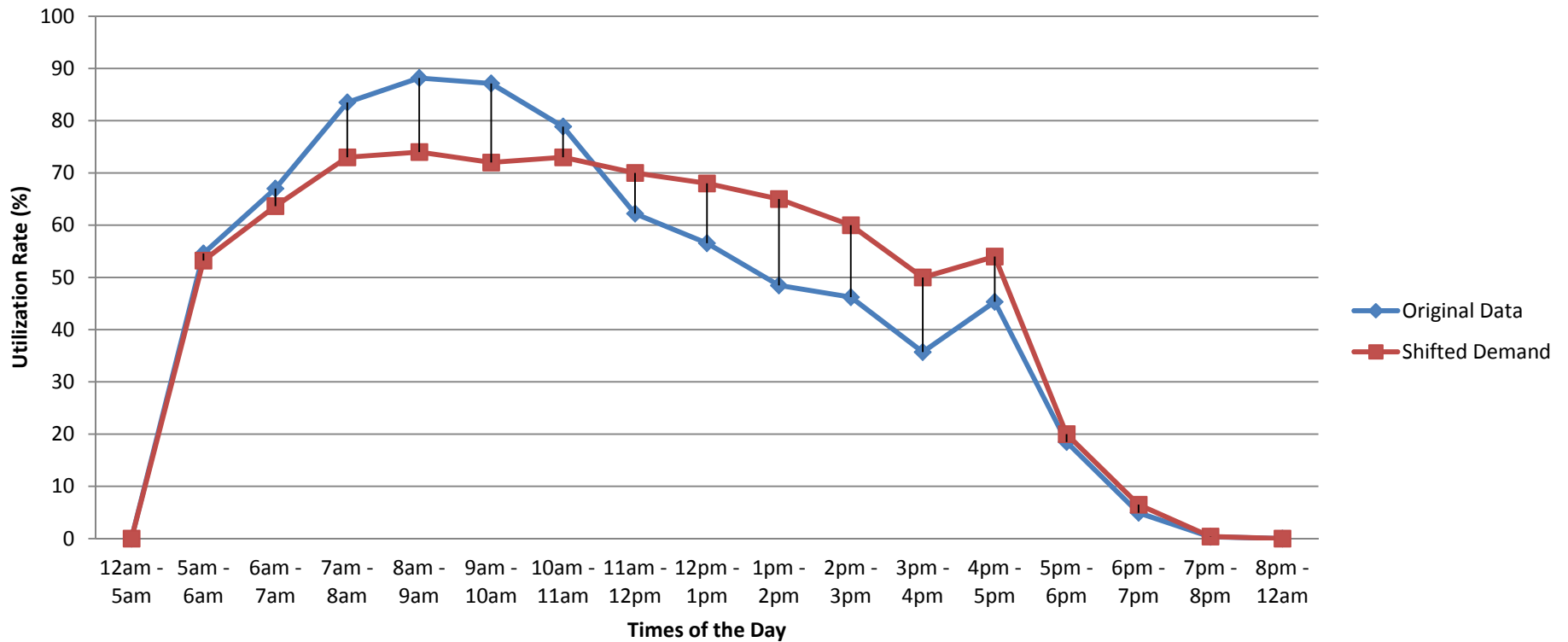
Goal: Determine a revenue-neutral pricing strategy that will allow us to shift demand from peak to off-peak demand times in order to improve quality of play through increased tee time interval

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Estimates

- Increase Morning Tee Intervals to 10 Minutes and Fees by 10%

- Increase Afternoon Tee Intervals to 9 Minutes and Drop Fees by 10%

- Balance Load

- Maintain Revenues

- Increase Opportunity for Faster Play

Research on Course/Hole Design

- ## Sequence of Holes
  - Long Par 3s following Short Par 5s

- ## Design of Holes
  - Short Par 4s with Difficult Green Complex
  - Long Par 4s believed to be Reachable

- **If Time to Tee and Walk to Fairway is Less than Time to Walk to Green and Hole Out**
  - Wait in Fairway
    - True for Short Par 4s with Difficult Green
    - True for "long" Par 4s believed to be Reachable

- **If Time to Hit and Walk to Green, Hole Out and Walk to Next Tee is Less than Time to Walk to Tee, Tee, Walk to Fairway, and Hit to Green**
  - Wait on Tee