HTHTS April TeleConference

**Call Center Math:
Managing by the Numbers**

Presented by:

THE CALL CeNTER SCHOOL

Workshop Leader

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Workshop Overview

In this workshop, you will learn to:

▪ Define the most common performance measures and numbers to understand in the areas of service, quality, efficiency, and profitability.

▪ Identify ways to analyze, interpret, and report call center performance numbers.

▪ Solve several common call center math problems.

What Numbers Should You Watch?

Key Concept:

Three Stakeholder Perspectives

Who are the three groups of people you need to keep happy each day?

Stakeholder Perspectives

Who are the main "stakeholders"?

- 1. _____
- 2. _____
- 3. _____

What does each care about?

What do you need to measure?

Stakeholder Perspectives

Stakeholder Group	Main Concerns	Performance Measures
Customers		
Management		
Frontline		
Other		

Who Cares About What?

- **Customers**
  - Service
  - Quality
- **Management**
  - Efficiency
  - Profitability
- **Agents**
  - Workload
  - Work environment

The Numbers

Service
- Availability (Are we there?)
- Speed of answer (How fast?)

Quality
- Quality (How well?)

Efficiency
- Staff utilization (Do we match workforce to workload?)
- Contact handling (How long does it take?)

Profitability
- Conversion and/or up-sell rate (Are we selling?)
- Cost per call (What are costs and margins?)

Service – Availability Measures

Availability Measures:

- Hours and days of operations

- Blockage and abandons

- Self-service options

Hours of Operation Example

Cost per Call Comparison

Time Period	Number of Calls	Number of Staff	Staff Cost per Call
2-2:30am	110	19	$ 3.45
8-8:30am	220	34	$ 3.09
2-2:30pm	440	65	$ 2.95

Note: All periods staffed to 80% in 20 second service level.

Evaluating Abandons

How would you use the following abandon statistics?

Time to Abandon	Percent Abandoning
0 – 3 sec	3%
3 – 6 sec	1%
6 – 12 sec	1%
12 – 18 sec	2%
18 – 24 sec	2%
24 – 30 sec	8%

Another Availability Measure

Self Service Availability:

- IVR or Web

- Percent of customers that use

- Percent of contacts that complete there

- Exit points

Speed of Answer Measures

Speed of Answer Measures:

- Service level (x % in y sec)

- Average speed of answer (ASA)

Activity

Arrival Number	Time of Arrival	Handle Time	Time Call Began		Time Call Ended	Delay of Call
1	8:02.2	2.4	8:02.2	a	8:04.6	0
2	8:02.4	2.6	8:02.4	b	8:05.0	0
3	8:03.6	2.0	8:04.6	a	8:06.6	1.0
4	8:04.3	3.2	8:05.0	b	8:08.2	0.7
5	8:06.6	2.4	8:06.6	a	8:09.0	0
6	8:06.8	2.4	8:08.2	b	8:10.6	1.4
7	8:07.2	3.0	8:09.0	a	8:12.0	1.8
8	8:10.1	1.2	8:10.6	b	8:11.8	0.5
9	8:12.2	2.8	8:12.2	b	8:15.0	0
10	8:17.2	2.6	8:17.2	a	8:19.8	0
11	8:18.8	2.4				
12	8:21.0	6.0				
13	8:24.0	4.2				
14	8:26.2	2.4				
15	8:28.0	2.4				

Service Level:

in < 20 sec

Actual View of Service Level

Arrival Number	Time of Arrival	Handle Time	Time Call Began		Time Call Ended	Delay of Call
1	8:02.2	2.4	8:02.2	a	8:04.6	0
2	8:02.4	2.6	8:02.4	b	8:05.0	0
3	8:03.6	2.0	8:04.6	a	8:06.6	1.0
4	8:04.3	3.2	8:05.0	b	8:08.2	0.7
5	8:06.6	2.4	8:06.6	a	8:09.0	0
6	8:06.8	2.4	8:08.2	b	8:10.6	1.4
7	8:07.2	3.0	8:09.0	a	8:12.0	1.8
8	8:10.1	1.2	8:10.6	b	8:11.8	0.5
9	8:12.2	2.8	8:12.2	b	8:15.0	0
10	8:17.2	2.6	8:17.2	a	8:19.8	0
11	8:18.8	2.4	8:18.8	b	8:21.2	0
12	8:21.0	6.0	8:21.2	a	8:27.2	0
13	8:24.0	4.2	8:24.0	b	8:28.2	0
14	8:26.2	2.4	8:27.2	a	8:29.6	1.0
15	8:28.0	2.4	8:28.2	b	8:30.6	0.2

Service Levels:

9 of 15 (60%) in < 20 sec

10 of 15 (67%) in < 30 sec

13 of 15 (87%) in < 60 sec

Analyzing and Reporting Service Level

Time of Day	Call Volume	Daily %	SL (in 20 sec)
6:00 – 7:00	85	4.5%	100%
7:00 – 8:00	90	5.0%	95%
8:00 – 9:00	95	5.5%	95%
9:00 – 10:00	145	8.0%	90%
10:00 – 11:00	185	10.0%	75%
11:00 – 12:00	195	10.5%	70%
12:00 – 1:00	165	9.0%	80%
1:00 – 2:00	185	10.0%	80%
2:00 – 3:00	220	12.0%	65%
3:00 – 4:00	210	11.0%	70%
4:00 – 5:00	145	8.0%	80%
5:00 – 6:00	125	6.5%	85%

The Numbers

✓ **Service**
  ✓ Availability (Are we there?)
  ✓ Speed of answer (How fast?)

Quality
  ▪ Quality (How well?)

Efficiency
  ▪ Staff utilization (Do we match workforce to workload?)
  ▪ Contact handling (How long does it take?)

Profitability
  ▪ Conversion and/or up-sell rate (Are we selling?)
  ▪ Cost per call (What are costs and margins?)

Quality Measures

Internal Measures
  ▪ Monitoring scores
  ▪ Error and rework
  ▪ First call resolution

External Measures
  ▪ Customer surveys
  ▪ Complaints and praise

Data Analysis

Measures of Central Tendency

Three Types:
  ▪ Mean (average)
  ▪ Median
  ▪ Mode

Beware of averages –
need to understand distribution too!

Data Analysis

Measures of Distribution

Standard Deviation:
  ▪ Describes dispersion of results
  ▪ Shows how results are clustered around mean
  ▪ Is square root of the variance

	Low 1	2	Med 3	4	High 5	Mean	Standard Deviation
Data Set 1	15	0	5	0	15	3.0	1.88
Data Set 2	2	5	21	5	2	3.0	0.87

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✓ **Quality**
  - ✓ Quality (How well?)

Efficiency
  - Staff utilization (Do we match workforce to workload?)
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Efficiency Measures

Resource Utilization	**Contact Handling**
▪ Agent occupancy	▪ Average handle time (AHT)
▪ Shrinkage	▪ After call work (ACW)
▪ Schedule efficiency	▪ Hold times
▪ Self-service utilization	▪ Transfer rates

Staff Occupancy

Occupancy: Percentage of time an agent is actually involved in call handling during the hour versus sitting in the idle state waiting for a call

- Affected by economies of scale and service goal

- Calculation:

Agent occupancy = Workload hours ÷ Staff hours

Call Center Staffing Example

175 calls per half-hour, 5 minute AHT (280 talk/20 acw)
(29.2 erlangs)

Number of Staff	Average Speed of Answer	Service Level (in 30 sec)	Staff Occupancy
30	298 sec	24%	.97
31	107 sec	46%	.94
32	54 sec	62%	.91
33	30 sec	74%	.88
34	18 sec	82%	.86
35	11 sec	88%	.83

Service and Occupancy Relationship

Remember the Balance:

Service ↑ Staff ↑ $\dfrac{\text{Workload}}{\text{Staff}}$ = Occupancy ↓

Resource Utilization

As you build schedules, try and expand your mix:

- Full vs part-time mix
- Different shift lengths
- Days on/off mix
- Staggered start times

Flexibility is the key.

Efficiency Measures

Contact Handling
- Average handle time (AHT)
- After call work (ACW)
- Hold times
- Transfer rates
- System speed and availability

Forecast versus Actual

What if calls take 30 seconds longer to handle?

Time of Day	Forecast Calls	Forecast AHT	Forecast Staff	Actual Calls	Actual AHT	New Staff	Net Staff
6:00	280	320	56	280	350	61	- 5
6:30	310	320	62	310	350	68	- 6
7:00	350	320	69	350	350	76	- 7
7:30	380	320	75	380	350	82	- 7
8:00	420	320	82	420	350	90	- 8
8:30	450	320	88	450	350	96	- 8

The Numbers

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✓ **Efficiency**
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Profitability
  - Conversion and/or up-sell rate (Are we selling?)
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Profitability Measures

- **Conversion rate:**
  - Percent of calls resulting in a sale
  - Percent of calls with add-on revenue
- **Revenues**
  - Sales per call (or per agent)
  - Sales per sign-on minute
  - Impact of negative references
- **Cost per call**

Revenue or Value per Call

Value per Call

- Average amount of revenue or value per single contact
- Can be measured by agent, team, group, or for entire center

2.5 contacts to sell product/item
Average value per item = $250
Value per call = $_____

Value per Call

Now...
Calculate for Customer Service Center:

No direct revenue
Customer retention annual value $1.2 million
10,000 contacts per month (phone and e-mail)

Value per contact = $_____

Calculating Efficiency

Cost per Call

- Average cost to handle a single contact
- By queue or entire center
- Labor cost issues
  - Wages only vs. "loaded"
  - Variable vs. fixed
- Options

Call Center "Top Twenty"

- Call blockage
- Abandon rate
- Service level or ASA
- Schedule adherence
- Agent occupancy
- Scheduled to actual staff
- Self-service percentage
- Average Handle Time (AHT)
- Transfer percentage
- Cost per call

- Error/rework percentage
- Hold time
- First call resolution(one and done)
- Successful sales percentage
- Successful upsell percentage
- Quality monitoring scores
- Employee retention
- Customer retention
- Employee satisfaction
- Customer satisfaction

How may of these do you use?

Top 10 List

Your Call Center:

1.
2.
3.
4.
5.

6.
7.
8.
9.
10.

Suggested Base Measures

- Service
  - Responsiveness – speed, abandons, transfers
  - Availability – hours, blockage, downtime
- Quality
  - Internal measures – monitoring scores
  - External measures – customer surveys
- Efficiency
  - Cost per contact – including everything
  - Performance trends – continuous improvement
- Profitability
  - Direct revenue produced per contact
  - Value provided to other departments
  - → Reserve the rest for unique business goals.

Some Final Truths

- You can expect what you inspect.

- If you don't measure it, you can't manage it.

- Just because you can measure it doesn't mean you should.

- Just because you should measure it doesn't mean you can (at least easily).

- If you torture numbers long enough, they will admit to anything!

For More Information

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