

**PSMJ Resources, Inc.** PSMJ | Resources, Inc.®  
**Provider Number #J174**

**Part 1: Top-Down  
Budgeting Made Easy**  
**Course Number budgetingweb**

**Kate Allen, P.E.**  
**September 20, 2016**



# Using the Technology

To minimize the meeting panel, click the arrow



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# Credits with AIA CES

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- Questions related to specific materials, methods, and services will be addressed at the conclusion of this presentation.

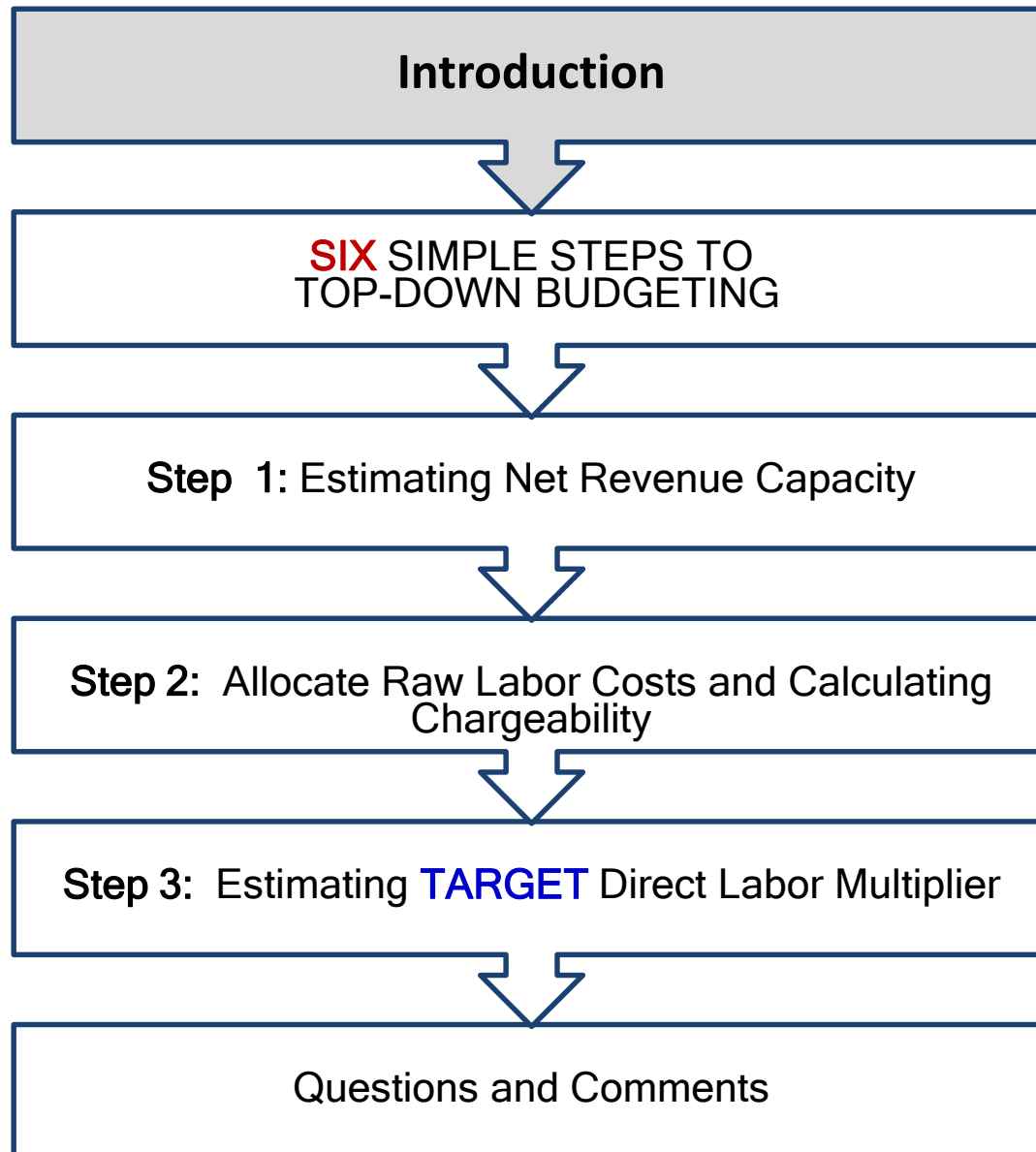


# Post Webinar

- Certificate(s)
- Credits
- Webinar Recording
- Special Offer
- Part 2: Top-Down Budgeting Made Easy

# Course Description

- In just two 60-minute webinars, PSMJ Consultant Kate Allen, P.E., demonstrates a top-down budgeting technique that will walk you through six simple steps, starting with calculating revenue capacity and ending with a discussion on year-end profit allocation.
- During each webinar, she shares valuable benchmarking data from PSMJ's annual *Financial Performance Survey* and *Management Compensation Survey*, which allows you to check for “reasonableness” as you develop your budget.
- By the end of the first webinar, you will be able to understand the three steps
  - **Step 1:** Estimating Revenue Capacity
  - **Step 2:** Evaluate Raw Labor Costs and Chargeability/Utilization
  - **Step 3:** Estimating TARGET Direct Labor Multiplier



# Kate Allen, P.E., MBA



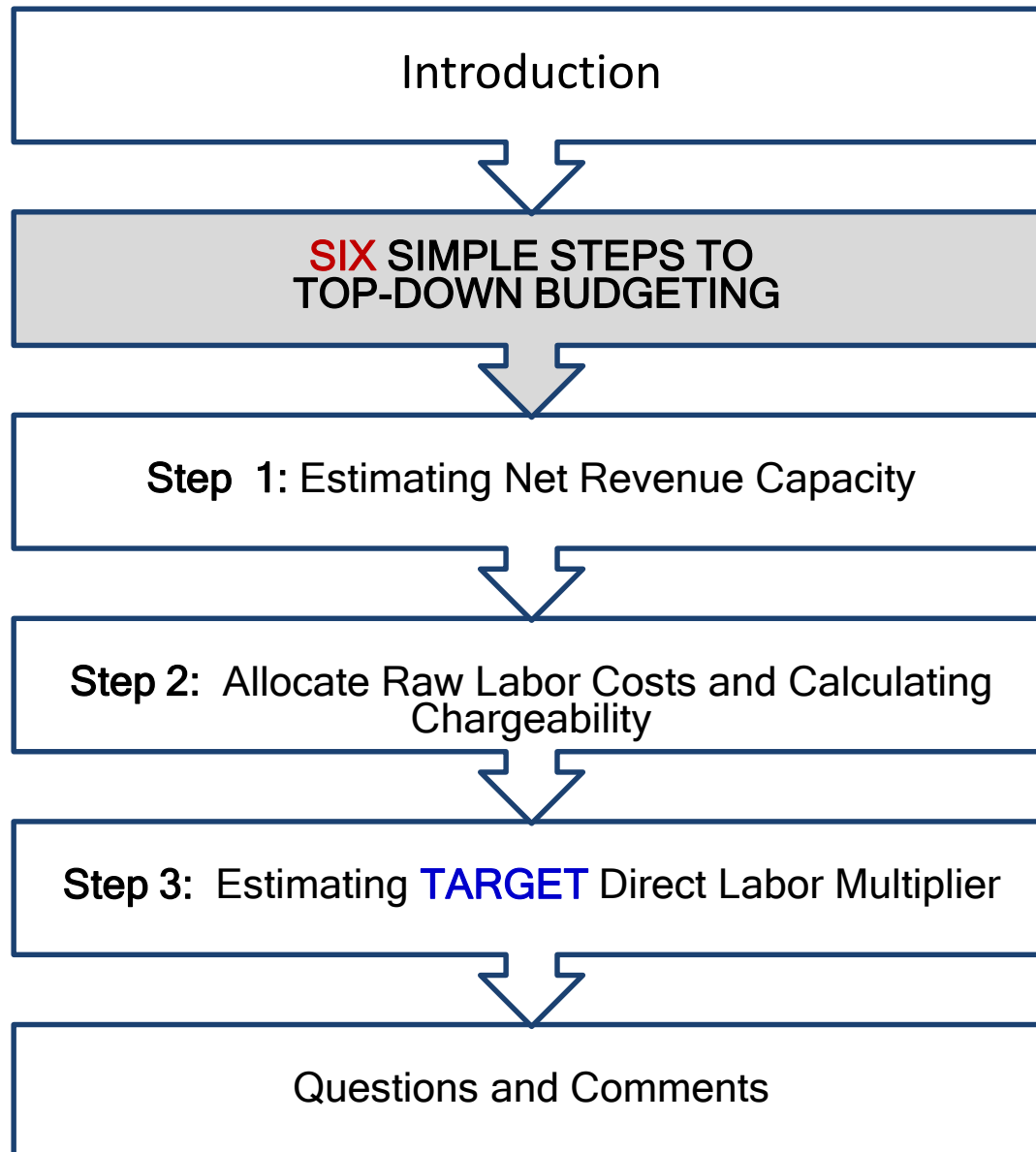
- PSMJ's Director of A/E/C Surveys
- Affiliated with PSMJ since 2005
- Education:
  - B.A. Psychology
  - B.S. Mechanical Engineering
  - MBA
- Background:
  - Engineer/Associate with MKK Engineers
  - Co-Founder of Caveo Consulting Engineers
  - Constructive Technologies Group

## WHO is PSMJ?

	Newsletters	Surveys & Books	Seminars & Conferences	Consulting
Strategy	✓	✓	✓	✓
Marketing	✓	✓	✓	✓
Project Delivery	✓	✓	✓	✓
Finance	✓	✓	✓	✓
Human Resources	✓	✓	✓	✓
Ownership Transition	✓	✓	✓	✓

- Providers of management information
- Focused exclusively on the A/E/C industry for over 35 years





# SIX SIMPLE STEPS TO TOP-DOWN BUDGETING

- 1. Calculating Net Revenue Capacity**
- 2. Separating Raw Labor Costs & Calculating Chargeability**
- 3. Est. Target Direct Labor Multiplier**
4. Est. Overhead Rate (Labor & Non-Labor)
5. Putting it All Together – Est. Firm Profits
6. Discussion on Allocation of Profits

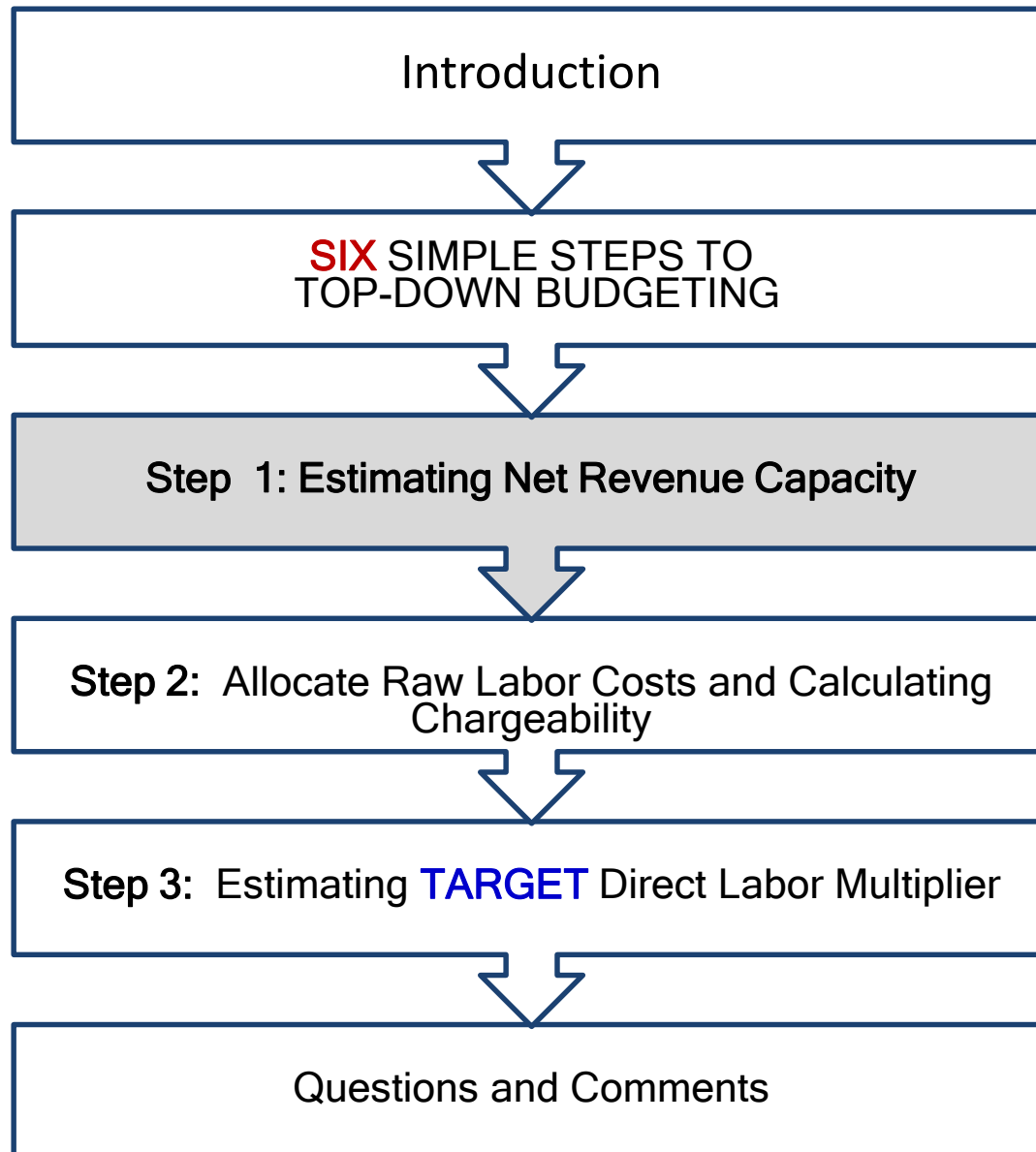
EXAMPLE INCOME STATEMENT		
<b>INCOME</b>		
GROSS REVENUE		\$12,000,000
REIMBURSABLE EXPENSES		\$1,000,000
REIMBURSABLE SUBS		<u>\$2,000,000</u>
	<b>NET REVENUE</b>	<b>\$9,000,000</b>
<b>COST OF GOODS SOLD</b>		
<b>DIRECT LABOR</b>		<b>\$2,400,000</b>
PROJECT RELATED EXPENSES		\$1,000,000
PROJECT RELATED SUBS		<u>\$2,000,000</u>
	<b>TOTAL COST OF GOODS SOLD</b>	<b>\$5,400,000</b>
	<b>GROSS MARGIN</b>	<b>\$6,600,000</b>
<b>EXPENSES</b>		
<b>OVERHEAD</b>		
<b>LABOR OVERHEAD</b>		<b>\$1,600,000</b>
<b>GENERAL OVERHEAD</b>		<b><u>\$2,700,000</u></b>
	<b>TOTAL EXPENSES</b>	<b>\$4,300,000</b>
	<b>EARNINGS/PROFIT</b>	<b>\$2,300,000</b>
	<b>% OF NET REVENUE</b>	<b>25.56%</b>

# DEFINITIONS

- **Net Revenue** – revenue generated by in-house labor
- **Direct Labor Costs or Expense** – project labor, priced at raw salary cost (does NOT include fringe benefits, also called burden)
- **Indirect Labor Cost or Expense** – all labor NOT charged to projects, priced at raw salary cost (does NOT include fringe benefits/burden)

# DEFINITIONS

- **Chargeability** – what percentage of your raw labor costs are allocated to project related work/time (also called “Billable Time” or “Utilization” or “Labor Utilization Rate”) [based on \$\$ not HOURS]
- **Target Direct Labor Multiplier** – based on your model this is the TARGET mark-up anticipated on direct labor costs.



# Step 1: Calculate Net Revenue Capacity

## CALCULATE REVENUE CAPACITY

<u>EMPLOYEE</u>	A	B	C
	<b>INPUT</b>	<b>INPUT</b>	<b>INPUT</b>
	<u># OF ANNUAL WORK</u>	<u>Est. % OF TIME ON</u>	<u>HOURLY BILLING</u>
	<u>HOURS</u>	<u>PROJECT WORK</u>	<u>RATE</u>
John	2,080	55%	\$175
Julie	1,560	25%	\$60
Kim	2,080	85%	\$125
Tim	2,000	80%	\$85
Sue	2,288	90%	\$95
Peggy	2,080	0%	\$60
Mike	2,080	80%	\$145
	<b>14,168</b>		<b>\$106</b>
	<b>TOTAL ANNUAL WORK</b>		<b>AVERAGE</b>
	<b>HOURS</b>		<b>BILLING RATE</b>

# Step 1: Calculate Net Revenue Capacity

## CALCULATE REVENUE CAPACITY

	A	B	C
	INPUT	INPUT	INPUT
	<u># OF ANNUAL WORK</u>	<u>Est. % OF TIME ON</u>	<u>HOURLY BILLING</u>
<u>EMPLOYEE</u>	<u>HOURS</u>	<u>PROJECT WORK</u>	<u>RATE</u>
John	2,080	55%	\$175
Julie	1,560	25%	\$60

**Calculate Net Revenue Capacity for Each Person: A x B x C**

John	2080hrs X 55% Billable X \$175 Hourly Billing Rate =	<b>\$200,200 of Net Revenue</b>
Julie	1560hrs X 25% Billable X \$60 Hourly Billing Rate =	<b>\$23,400 of Net Revenue</b>



# Step 1: Calculate Net Revenue Capacity

## CALCULATE REVENUE CAPACITY

	A	B	C	D
	INPUT	INPUT	INPUT	$A \times B \times C$
<u>EMPLOYEE</u>	<u># OF ANNUAL WORK HOURS</u>	<u>Est. % OF TIME ON PROJECT WORK</u>	<u>HOURLY BILLING RATE</u>	<u>NET REVENUE CAPACITY</u>
John	2,080	55%	\$175	\$200,200
Julie	1,560	25%	\$60	\$23,400
Kim	2,080	85%	\$125	\$221,000
Tim	2,000	80%	\$85	\$136,000
Sue	2,288	90%	\$95	\$195,624
Peggy	2,080	0%	\$60	\$0
Mike	2,080	80%	\$145	\$241,280
	<b>14,168</b>		<b>\$106</b>	<b>\$1,017,504</b>
	<b>TOTAL ANNUAL WORK HOURS</b>		<b>AVERAGE BILLING RATE</b>	<b>NET REVENUE CAPACITY AS MODELED</b>

# Validate - Hourly Billing Rate

<u>EMPLOYEE</u>	<u>Position</u>	<u>HOURLY BILLING RATE</u>
John	Prin	\$175
Julie	Admin	\$60
Kim	Jr PM	\$125
Tim	Jr PM	\$85
Sue	Jr PM	\$95
Peggy	Bus Mgr	\$60
Mike	Sr PM	\$145

Hourly Billing Rates		
	<u>Other Prin Median</u>	<u>Sr. Project Manager Median</u>
Overall	\$185	\$154
<b>Staff Size 1 to 20</b>	<b>180</b>	<b>138</b>
Staff Size 21 to 50	190	154
Staff Size 51 to 100	198	160
Staff Size 101 to 250	185	163
Staff Size 251 to 500	199	187
Architectural	250	140
Architectural/Interiors	185	160
Engineering (Prime)	185	160
<b>Engineering (Sub)</b>	<b>175</b>	<b>160</b>
Engineering (Survey)	NR	139
A/E	188	153
Environmental	NR	122

**Source: PSMJ's 2016 Management Compensation Benchmark Survey Report**

# Average Net Revenue per Total Staff



**Estimated Net Revenue:  
\$1,071,504**

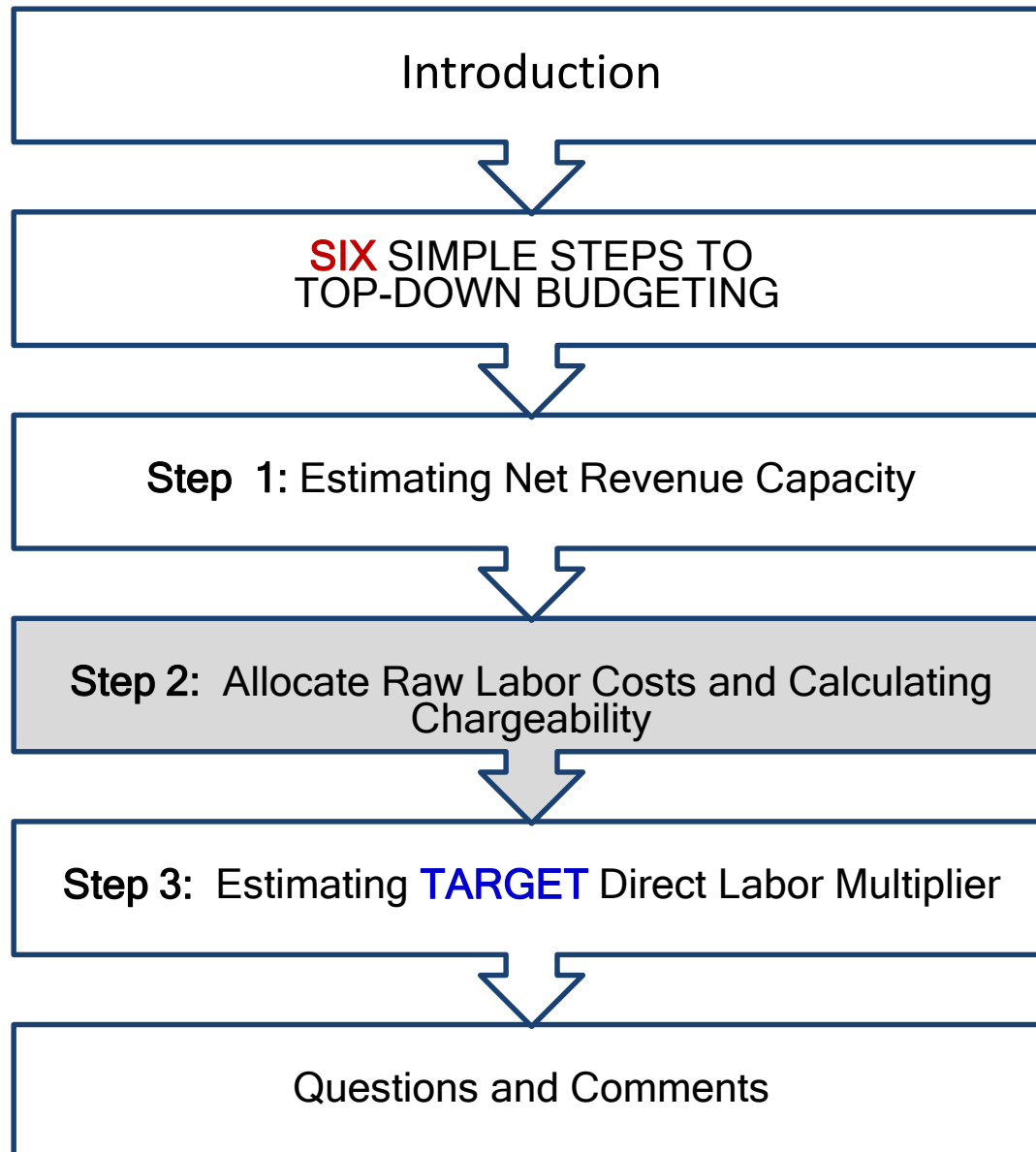
**Total Number of Staff: 7**

**Net Revenue per Total Staff:**

**\$1,071,504 / 7 Staff = \$145,358**

# Validate – Net Revenue per Total Staff

Net Revenues per Total Staff	25 <sup>th</sup> Percentile	Median	75 <sup>th</sup> Percentile
Overall	\$121,410	\$138,352	\$159,420
<b>Staff Size 1 to 20</b>	<b>112,229</b>	<b>126,813</b>	 <b>154,498</b>
Staff Size 21 to 50	126,682	142,624	166,117
Staff Size 51 to 100	120,937	134,221	152,000
Staff Size 101 to 200	119,654	136,289	158,734
Staff Size 201 to 350	125,761	140,852	157,850
Staff Size 351 to 750	142,555	152,083	173,582
Architectural	124,984	150,152	167,835
Architectural/Interiors	124,571	145,676	166,688
Engineering (Prime)	121,317	137,810	155,292
<b>Engineering (Subconsultant)</b>	<b>125,608</b>	<b>143,805</b>	 <b>166,364</b>
Engineering (Survey)	112,596	126,916	138,539
A/E	116,208	132,198	153,060
Environmental	109,266	144,090	188,861



## Step 2: Allocate Raw Labor Costs

### ALLOCATE RAW LABOR COSTS

	A	B
	INPUT	INPUT
<u>EMPLOYEE</u>	<u># OF ANNUAL WORK HOURS</u>	<u>Est. % OF TIME ON PROJECT WORK</u>
John	2,080	55%
Julie	1,560	25%

**Calculate # of Hours to Billable and Non-Billable Work for Each Person:  $A \times B = \text{Billable (F)}$ ;  $A - F = \text{Non-Billable (G)}$**

John	2080hrs X 55% =	1,144 Billable Hours
	2080hrs – 1,144 Billable Hours =	936 Hours Non-Billable
Julie	1560hrs x 25% =	390 Billable Hours
	1560hrs – 390 Billable Hours =	1,170 Non-Billable Hours

# Step 2: Allocate Raw Costs

## ALLOCATE RAW LABOR COSTS

	<b>E</b>	<b>F</b>	<b>G</b>
	<b>INPUT</b>	<b>A x B</b>	<b>A - F</b>
<u>EMPLOYEE</u>	<u>HOURLY SALARY</u> <u>(w/o burden)</u>	<u># OF ANNUAL HOURS</u> <u>ON BILLABLE WORK</u>	<u># OF ANNUAL HOURS</u> <u>ON NON-BILLABLE</u> <u>WORK</u>
John	\$50	1,144	936
Julie	\$20	390	1,170
Kim	\$40	1,768	312
Tim	\$28	1,600	400
Sue	\$27	2,059	229
Peggy	\$28	0	2,080
Mike	\$42	1,664	416
		<b>8,625</b>	<b>5,543</b>
		<b>TOTAL BILLABLE</b> <b>HOURS</b>	<b>TOTAL NON-</b> <b>BILLABLE HOURS</b>

## Step 2: Allocate Raw Costs

	E	F	G	H	I	J
	INPUT	A x B	A - F	E x F	E x G	A x E
						<u>TOTAL</u>
<u>EMPLOYEE</u>	<u>HOURLY SALARY</u> (w/o burden)	<u># OF ANNUAL</u> <u>HOURS ON</u> <u>BILLABLE WORK</u>	<u># OF ANNUAL</u> <u>HOURS ON NON-</u> <u>BILLABLE WORK</u>	<u>DIRECT</u> <u>SALARY</u>	<u>INDIRECT</u> <u>SALARY</u>	<u>ANNUAL</u> <u>SALARY</u>
John	\$50	1,144	936	\$57,200	\$46,800	\$104,000
Julie	\$20	390	1,170	\$7,800	\$23,400	\$31,200

**Calculate Direct Salary and Indirect Salary Costs for Each Person:**  
**E x F = Direct Salary; E x G = Indirect Salary**

John     \$50 hourly salary X 1,144 Billable Hours =     \$57,200 Direct  
            \$50 hourly salary X 936 Non-Billable Hours =     \$46,800 Indirect

**OR**

John     \$104,000 annual salary X 55% Billable     =     \$57,200 Direct  
            \$104,000 annual salary X 45% Non-Billable =     \$46,800 Indirect



## Step 2: Allocate Raw Labor Costs

	E	F	G	H	I	J
	INPUT	A x B	A - F	E x F	E x G	A x E
			# OF ANNUAL HOURS ON NON-BILLABLE WORK		INDIRECT SALARY	TOTAL ANNUAL SALARY
<u>EMPLOYEE</u>	<u>HOURLY SALARY (w/o burden)</u>	<u># OF ANNUAL HOURS ON BILLABLE WORK</u>		<u>DIRECT SALARY</u>		
John	\$50	1,144	936	\$57,200	\$46,800	\$104,000
Julie	\$20	390	1,170	\$7,800	\$23,400	\$31,200
Kim	\$40	1,768	312	\$71,290	\$12,581	\$83,871
Tim	\$28	1,600	400	\$45,333	\$11,333	\$56,667
Sue	\$27	2,059	229	\$55,893	\$6,210	\$62,103
Peggy	\$28	0	2,080	\$0	\$58,240	\$58,240
Mike	\$42	1,664	416	\$69,888	\$17,472	\$87,360
		8,625	5,543	<b>\$307,404</b>	<b>\$176,036</b>	<b>\$483,440</b>
				<u><b>DIRECT LABOR EXPENSE</b></u>	<u><b>INDIRECT LABOR EXPENSE</b></u>	<u><b>SALARY EXPENSE</b></u>

# Step 2: Allocate Raw Labor Costs

H

I

J

\$307,404

\$176,036

\$483,440

DIRECT LABOR  
EXPENSE

INDIRECT LABOR  
EXPENSE

TOTAL SALARY  
EXPENSE

## Step 2: Allocate Raw Costs & Calculate Chargeability for Firm/Team



**Total Direct Labor Expense:  
\$307,404**

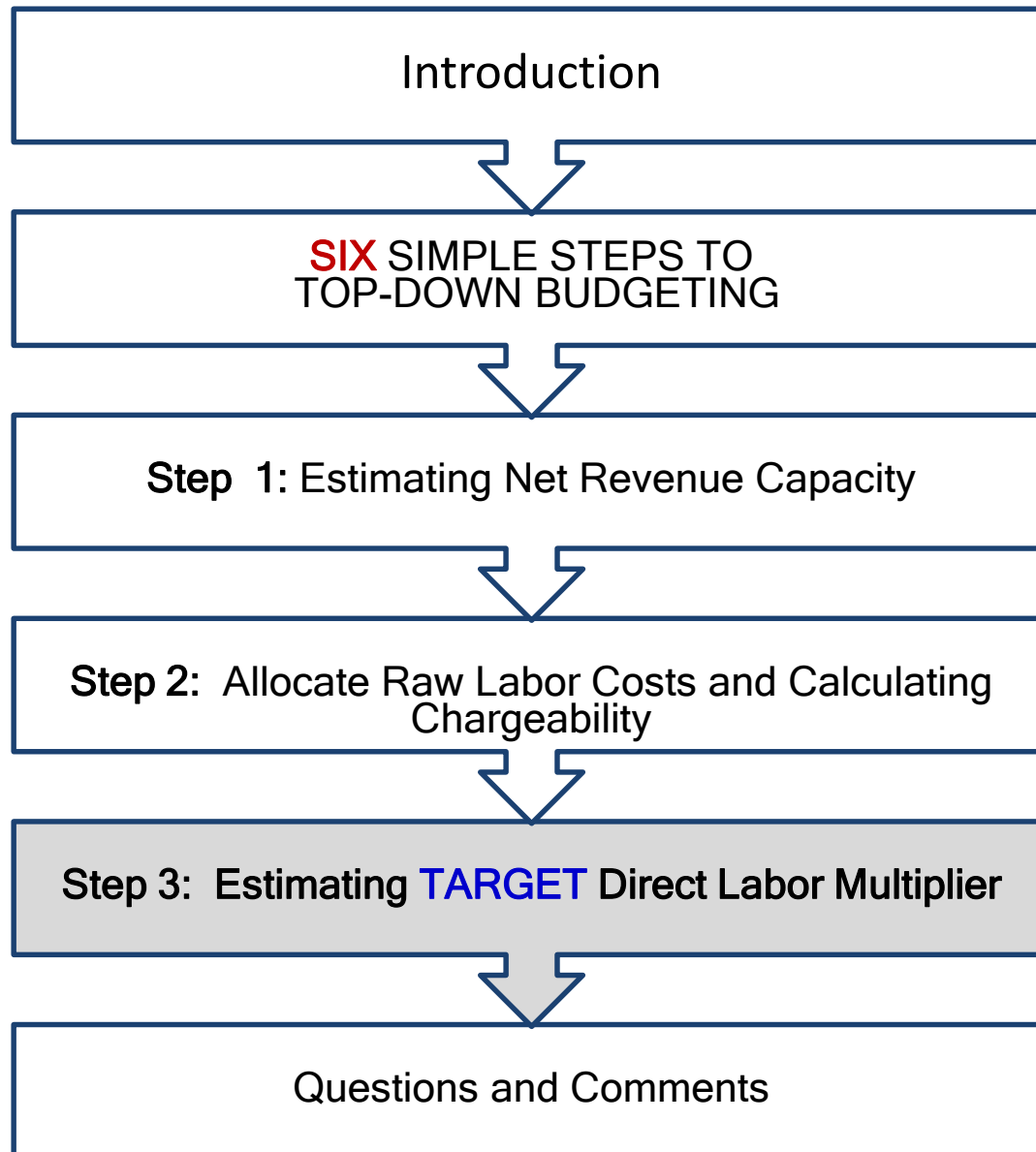
**Total Salary Expense:  
\$483,440**

**Chargeability = Total Direct Labor  
Expense / Total Salary Expense**

**\$307,404 / \$483,440 = 64%**

# Validate - Chargeability

Labor Utilization Rate (Payroll Dollars)	Labor Chargeability Percentage (of Payroll Dollars)		
	25 <sup>th</sup> Percentile	Median	75 <sup>th</sup> Percentile
Overall	55%	60%	66%
<b>Staff Size 1 to 20</b>	<b>55</b>	<b>61</b>	 <b>67</b>
Staff Size 21 to 50	53	62	68
Staff Size 51 to 100	54	60	65
Staff Size 101 to 200	55	58	62
Staff Size 201 to 350	56	62	65
Staff Size 351 to 750	55	58	65
Architectural	52	58	65
Architectural/Interiors	52	60	69
Engineering (Prime)	55	59	65
<b>Engineering (Sub)</b>	<b>58</b>	<b>63</b>	 <b>69</b>
Engineering (Survey)	56	63	65
A/E	54	56	64
Environmental	50	53	62



## Step 3: Calculate **TARGET** Direct Labor Multiplier for Firm/Team



**Total Net Revenue: \$1,017,504**

**Total Direct Labor Expense: \$307,404**

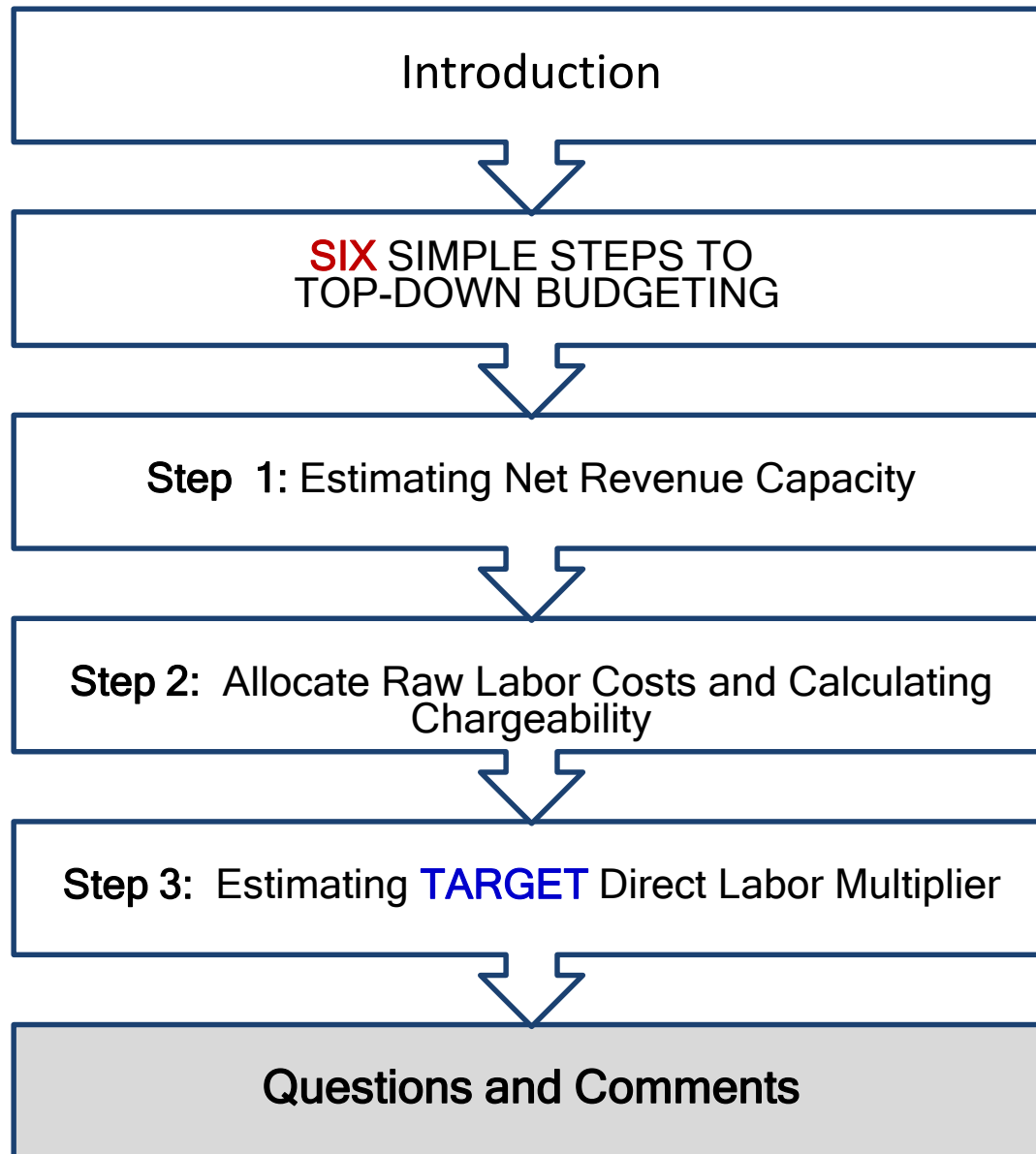
**Target DLM = Total Net Revenue / Total Direct Labor Costs**

**Target DLM: \$1,017,504 / \$307,404 = 3.31**

PSMJ | Resources, Inc. • **Validate - Direct Labor Multiplier**

Net Direct Labor Multiplier <b>Achieved</b>	Net Multiplier Achieved/Net Revenues per Direct Labor Dollars		
	25 <sup>th</sup> Percentile	Median	75 <sup>th</sup> Percentile
Overall	2.80	3.09	3.47
<b>Staff Size 1 to 20</b>	<b>2.60</b>	<b>3.30</b> 	<b>3.90</b>
Staff Size 21 to 50	2.79	3.16	3.64
Staff Size 51 to 100	2.81	3.09	3.38
Staff Size 101 to 200	2.88	3.12	3.46
Staff Size 201 to 350	2.79	2.94	3.09
Staff Size 351 to 750	2.94	3.27	3.38
Architectural	3.25	3.54	4.14
Architectural/Interiors	2.95	3.33	4.08
Engineering (Prime)	2.79	3.02	3.37
<b>Engineering (Sub)</b>	<b>2.66</b>	<b>2.96</b> 	<b>3.42</b>
Engineering (Survey)	2.70	3.15	3.39
A/E	2.85	3.09	3.38
Environmental	2.80	3.43	3.86

Source: PSMJ's 2016 Financial Performance Benchmark Survey Report





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- Special Offer
- Part 2: Top-Down Budgeting Made Easy

# Q&A

# Follow Up Questions or Comments?

## Questions about the content:

**Kate Allen, P.E.**

**PSMJ Resources, Inc.**

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**E-mail: [kallen@psmj.com](mailto:kallen@psmj.com)**

## Questions about the credits, certificates, webinar recording, etc.:

**Olivia Roma, Meetings Manager**

**PSMJ Resources, Inc.**

**Phone: (800) 537-PSMJ (7765)**

**E-mail: [education@psmj.com](mailto:education@psmj.com)**

**Thank you!**

**September 27, 2016**

**1:30pm ET**

**NEXT TIME WE'LL COVER.....**

**Step 4: Estimating Overhead Rate  
(Labor and General Overhead)**

**Step 5: Calculating Breakeven Direct Labor Multiplier**

**Step 6: Putting it All Together + Discussion About  
Allocation of Yearend Profits**

**This concludes The American Institute of Architects  
Continuing Education Systems Course**

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**PSMJ Resources, Inc.**

**Olivia Roma, Meetings Manager**

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