

# Final Presentation

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## CoNVO - Business Problem

**Context:** Team is to analyze employed candidates enrolled at Employment Now! a Back To Work program servicing hard to place individuals and families in NYC. Data analysis will be done in order to build out candidate employability profiles to be used by Employment Now! to increase hire and retention rate based on which new contract will be negotiated. Furthermore, data will be used to explore characteristics for the hard to serve population in NYC that have gained successful employment.

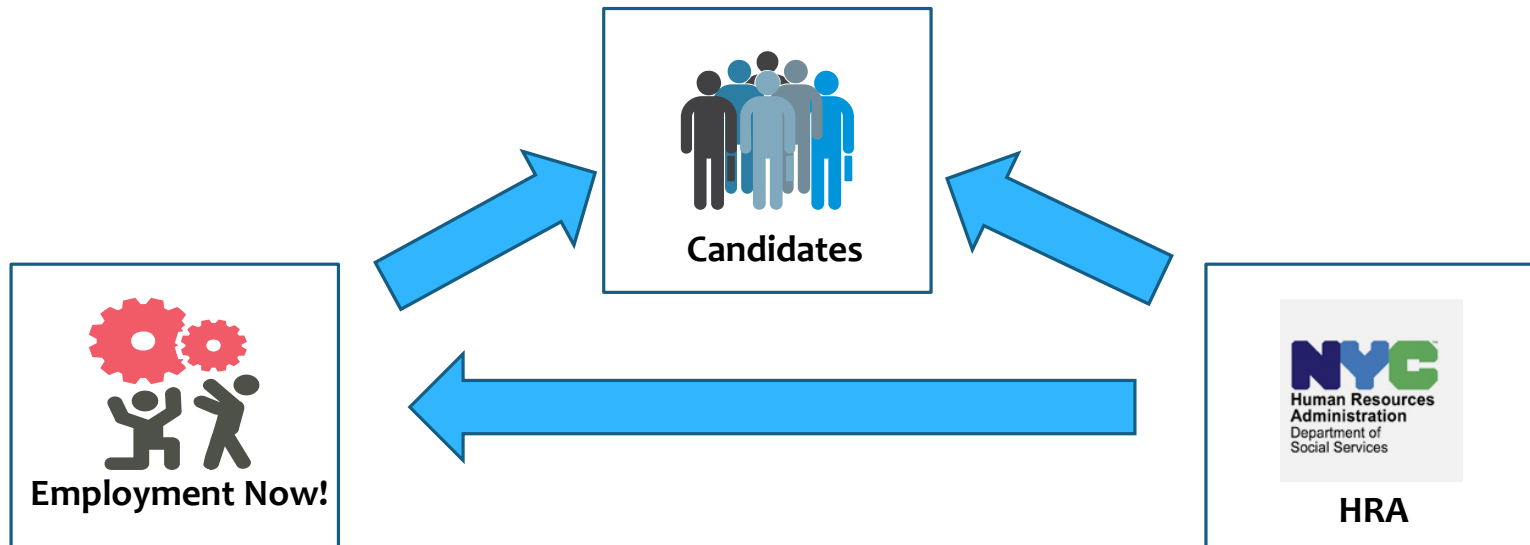
**Need:** Employment Now! is having a hard time identifying candidates for open positions. Currently they are screening all interested candidates but this practice has become time consuming and ineffective. Employment Now! needs to segment their candidates before screening in order to reduce screening time and increase hire rate. This analysis would be tested and new contract terms will be set accordingly

**Vision:** Team to create candidate profiles per industry. Team is also to provide a recommendation on contract renegotiation based on hire rate, retention rate and cadence.

**Outcomes:** Team will track KPI's which include hire rate % to candidate enrollment and retention rate.

# About Our Client: Employment Now!

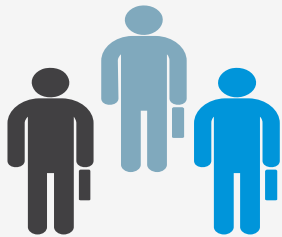
- Employment Now! Is a Back to Work program contracted by the Human Resource Administration (HRA) to assist candidates enrolled in Public Assistance in finding and retaining employment
- Employment Now! provides services in resume writing, interview training, and attire to prepare candidates for employment.
- Once prepared, candidates will work closely with case workers who have relationships with employers throughout NYC and will refer for a interview



# Employment Now! Is currently in negotiations with HRA for a contract extension

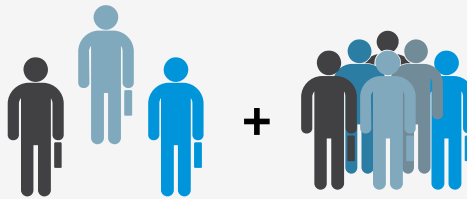
- Current contract is performance based - Employment Now! is paid per candidate hire and retention milestones
- Contract ends Q2 FY2016 and Employment Now! is in the middle of a RFP to get an extension

## performance based contract?



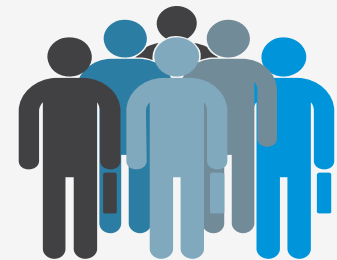
Pay per client per milestone achieved

## Blended approach?



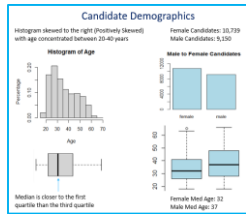
Fixed fee + per client milestone after aggregates met

## Fixed Fee?

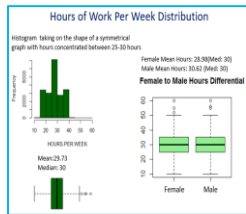


Fixed milestones to be completed each month – no roll over

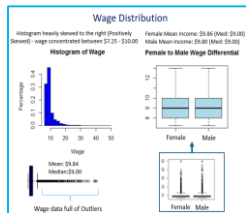
# Data Exploration Recap



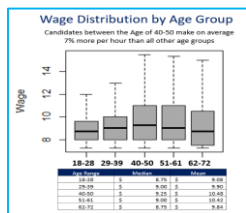
- ✓ Age of candidates hired is concentrated between 20-40 years
- ✓ Percentage difference between female and male candidates hired is 16%
- ✓ Median age of female and male candidates hired is 32 and 37



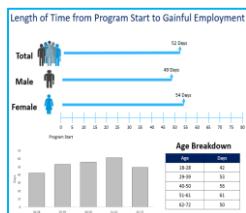
- ✓ Hours of work per week concentrated between 25-30 hours
- ✓ Median working hours of female and male candidates hired is 30



- ✓ Wage of candidates are concentrated between \$7.25 - \$10.00
- ✓ Median income of female and male candidates is \$9.00



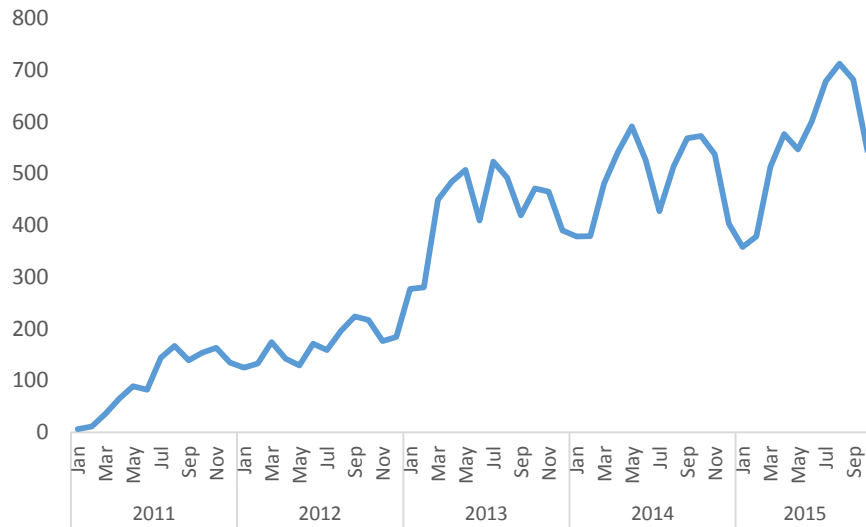
- ✓ On average, candidates between the age of 40-50 earn 7% more per hour than all other age groups
- ✓ Median Income of 40-50 age group is \$9.25



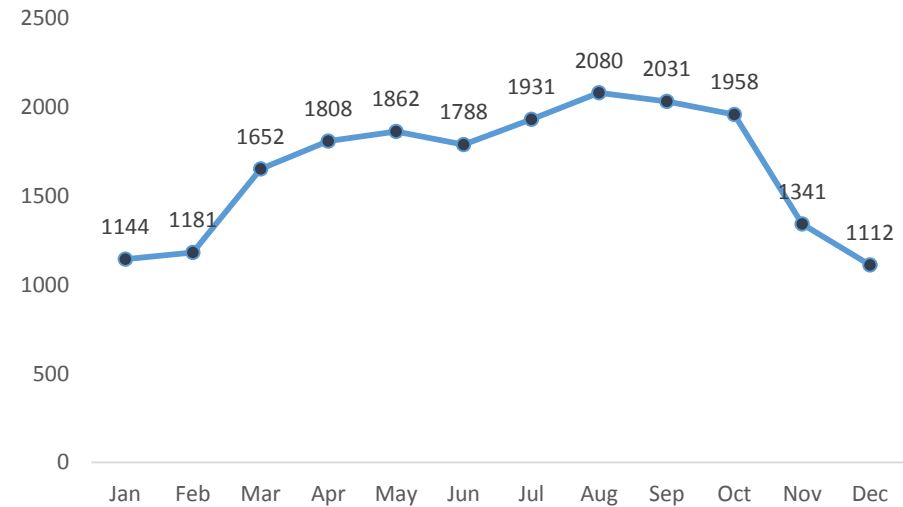
- ✓ In total, length of time from program start to gainful employment is 52 days
- ✓ On average, Female take 2 days more than males
- ✓ Youngest (18-28) are the fastest to get employed

# YoY Growth and Employment Seasonality

## YoY Growth



## Seasonality Trend (Monthly)



- General growth trend over time
- Hires peak in the summer months and drop in the winter months
- August is peak hire month may have to do with temp employment for holidays

# Time Series Forecasting Model (Calculations)

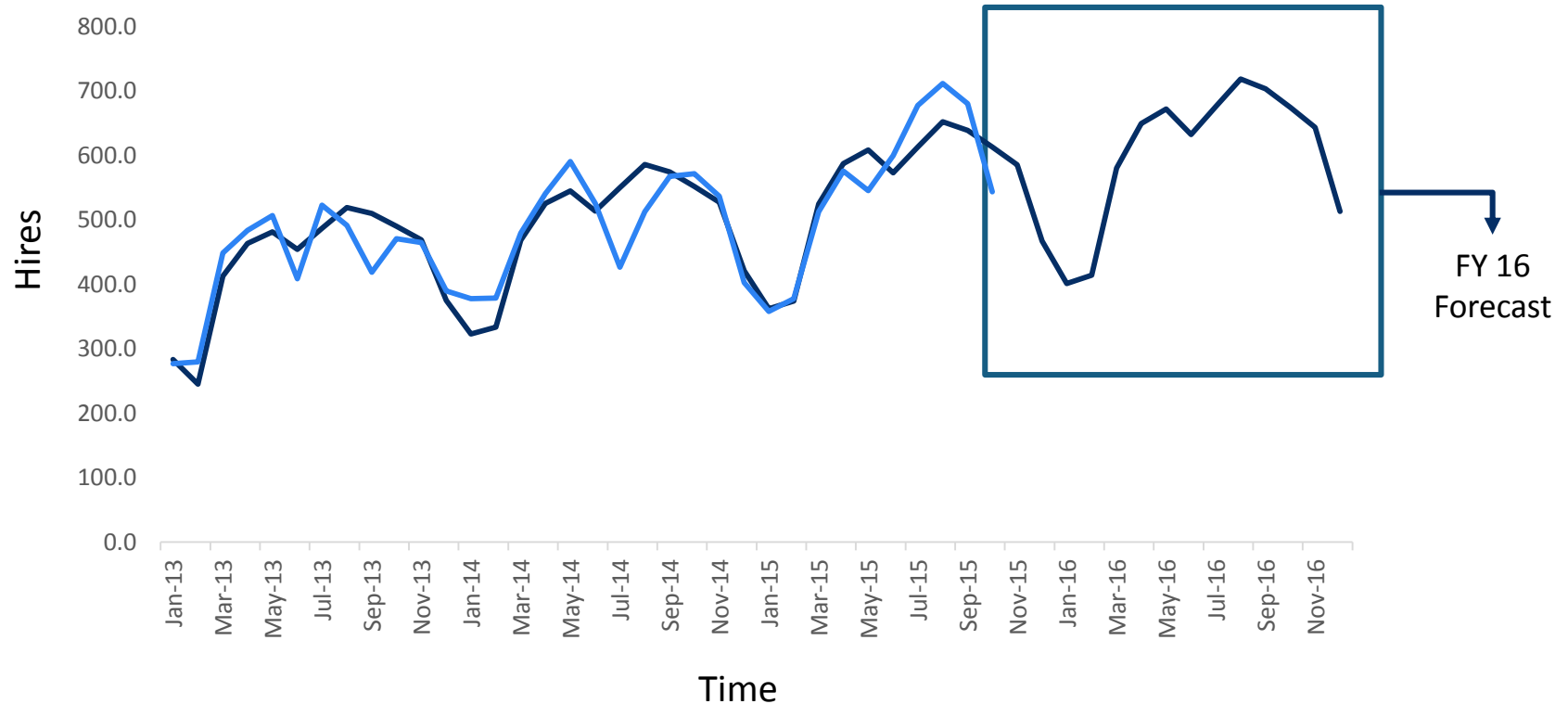
- Dataset has seasonal component
- Deseasonalized and calculated irregularity components
- Did time series forecasting to predict future hire numbers.

t	Date	Month	Hires
1	Jan-13	January	277
2	Feb-13	February	280
3	Mar-13	March	449
4	Apr-13	April	484
5	May-13	May	507

$Y_t = \text{Trend Component(Regression)} * \text{Seasonal Component} * \text{Irregularity Component}$

Moving Average	$I_t$	$S_t$	Deseasonalize	$T_t$	Forecast
		337.7	0.82	0.84	283.7
335	0.8	345.7	0.81	0.85	245.3
404	1.1	480.7	0.93	0.86	458.8
480	1.0	533.7	0.91	0.87	467.8
467	1.1	548.0	0.93	0.88	523.3

# Time Series Forecasting Model



## FY 16 Forecast

Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
401	414	581	650	673	633	677	719	704	675	644	514

- Maintained general growth trend for hires.
- 7,285 hires expected for 2016

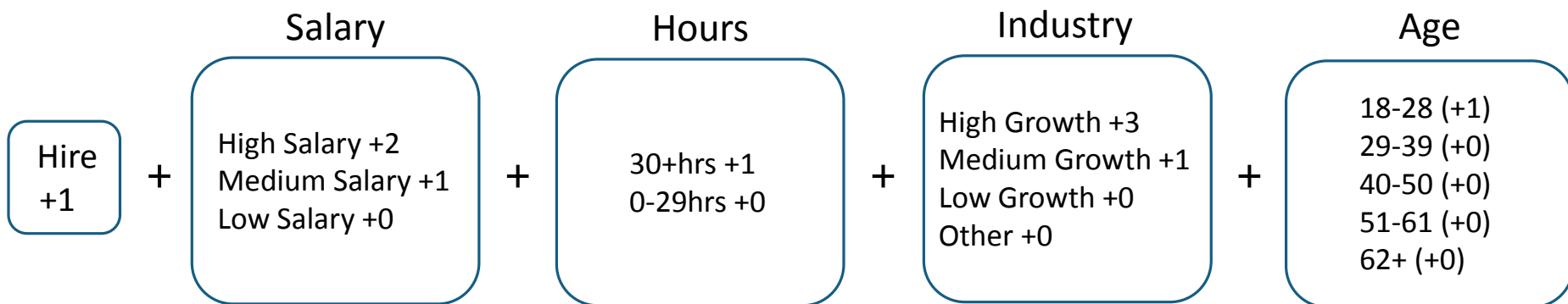


# Contract Negotiations – Signaling from HRA

## Potential Levers for FY16 Contract – increase pay per job/candidate characteristics

- A. Higher Salary
- B. Full Time hours
- C. Younger Candidates
- D. High Growth Industries

## Point System based on Job/Candidate Characteristics - Base = \$200.00 Per Hire



## 4-D matrix with assigned weights based on potential pay scale

INDUSTRY		HIGH_GROWTH						MED_GROWTH						LOW_GROWTH						OTHER					
HOURS		FT			PT			FT			PT			FT			PT			FT			PT		
SALARY	AGE	H	L	M	H	L	M	H	L	M	H	L	M	H	L	M	H	L	M	H	L	M	H	L	M
	18-28	8	6	7	7	5	6	6	4	5	5	3	4	5	3	4	4	2	3	5	3	4	4	2	3
	29-39	7	5	6	6	4	5	5	3	4	4	2	3	4	2	3	3	1	2	4	2	3	3	1	2
	40-50	7	5	6	6	4	5	5	3	4	4	2	3	4	2	3	3	1	2	4	2	3	3	1	2
	51-61	7	5	6	6	4	5	5	3	4	4	2	3	4	2	3	3	1	2	4	2	3	3	1	2
	62-72	7	5	6	6	4	5	5	3	4	4	2	3	4	2	3	3	1	2	4	2	3	3	1	2

# Current Hire Distribution

INDUSTRY		HIGH_GROWTH						MED_GROWTH						LOW_GROWTH						OTHER					
HOURS		FT			PT			FT			PT			FT			PT			FT			PT		
SALARY	AGE	HIGH	LOW	MED	HIGH	LOW	MED	HIGH	LOW	MED	HIGH	LOW	MED	HIGH	LOW	MED	HIGH	LOW	MED	HIGH	LOW	MED	HIGH	LOW	MED
	18-28	0.6%	0.5%	1.2%	0.3%	0.4%	1.0%	0.9%	1.7%	1.8%	0.3%	1.0%	0.6%	0.6%	7.0%	2.5%	0.4%	6.7%	2.1%	0.3%	0.7%	0.6%	0.1%	0.5%	0.3%
	29-39	1.2%	0.5%	1.5%	0.4%	0.4%	1.2%	2.2%	2.2%	2.3%	0.6%	1.3%	0.7%	1.1%	5.5%	2.5%	0.4%	4.0%	1.2%	0.8%	0.7%	0.7%	0.3%	0.5%	0.3%
	40-50	1.1%	0.4%	1.0%	0.2%	0.2%	0.7%	1.8%	1.5%	1.7%	0.4%	0.8%	0.4%	1.1%	3.0%	1.7%	0.3%	1.9%	0.6%	0.7%	0.5%	0.6%	0.1%	0.2%	0.2%
	51-61	0.7%	0.3%	0.7%	0.1%	0.1%	0.4%	1.2%	1.1%	1.4%	0.2%	0.6%	0.3%	0.7%	1.8%	1.0%	0.2%	1.1%	0.4%	0.5%	0.3%	0.3%	0.1%	0.2%	0.1%
	62-72	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

- Highly Concentrated within Low Growth Industries
- Highest Segmentation is 18-28 years with low pay, working full time in a low growth industry
- Moderate Concentration in the Med Growth industry

# Cost Per Hire (CPH)

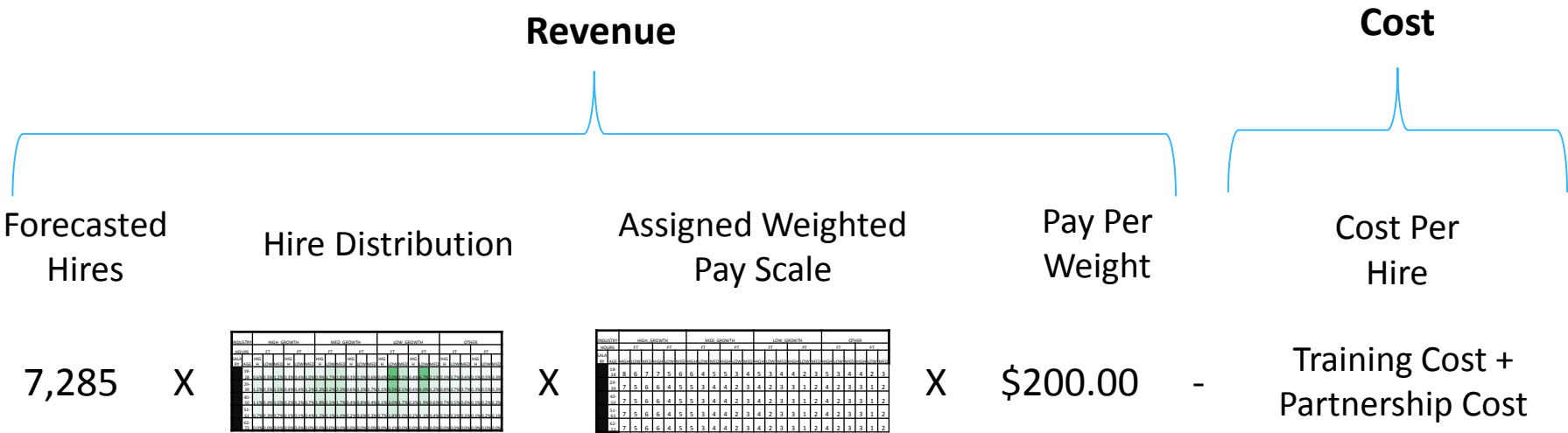
## Training Cost – Average training cost per age group

<u>Age</u>	<u>CPH</u>
18-28	225.00
29-39	225.00
40-50	242.00
51-61	250.00
62-72	260.00

## Partnership Cost– Average Partnership cost per pay group

<u>Pay</u>	<u>CPH</u>
High Pay	360.00
Med Pay	330.00
Low Pay	310.00

# Profit based on current hire distribution under new model



Revenue

Cost

Profit

\$4,983,351.70

-

\$4,069,898.27

=

\$913,453.44

# Internal Constraints and Job Market Constraints

## Internal Constraints

1. Increase Medium and High Growth industries by 10%

<u>Ind Growth</u>	<u>Current %</u>
High Growth	15%
Med Growth	27%
Low Growth	58%

2. Increase Medium and High Paying Salaries by 10%

<u>Pay</u>	<u>Current %</u>
High Pay	20%
Med Pay	32%
Low Pay	48%

3. Full Time Must be at least 65%

<u>Hours</u>	<u>Current %</u>
PT	35%
FT	65%

## Job Market Constraint

1. Segmentations can not move up or down more than 50%
2. Age distribution of hires will not change (legal)
3. Politically Sensitive

# Linear Program Results

INDUSTRY		HIGH_GROWTH						MED_GROWTH						LOW_GROWTH						OTHER					
HOURS		FT			PT			FT			PT			FT			PT			FT			PT		
SALARY	AGE	HIGH	LOW	MED	HIGH	LOW	MED	HIGH	LOW	MED	HIGH	LOW	MED	HIGH	LOW	MED	HIGH	LOW	MED	HIGH	LOW	MED	HIGH	LOW	MED
	18-28	64	51	129	28	45	109	103	189	201	29	37	22	66	687	92	41	243	75	38	24	22	13	19	9
	29-39	131	52	164	39	42	132	242	238	201	66	46	24	120	201	278	14	146	45	86	27	26	9	17	12
	40-50	122	47	111	21	19	77	200	53	61	46	30	16	119	209	164	11	68	20	80	18	22	14	8	7
	51-61	80	30	75	13	16	48	129	41	112	8	22	12	82	67	114	19	40	13	49	17	10	14	8	5
	62-72	1	1	2	0	1	0	5	1	1	1	0	0	1	5	0	0	1	0	0	1	2	1	0	0

Revenue

\$5,758,476.58

Cost

\$4,103,536.26

Profit

\$1,654,940.33

## Additional Benefits

- 8% increase in hires within High Growth Industries
- 9% increase in hires with higher paying wages
- 10% increase in hires with full time hours

# Proposed segmentation based on weighted pay scale

High Points  
Score of 6,7,8



10% of Total Hires  
15% Revenue Generator

Med Points  
Score of 4,5



48% of Total Hires  
65% Revenue Generator

Low Points  
Score of 1,2,3



42% of Total Hires  
20% Revenue Generator

INDUSTRY		HIGH_GROWTH						MED_GROWTH						LOW_GROWTH						OTHER					
HOURS		FT			PT			FT			PT			FT			PT			FT			PT		
SALARY	AGE	HIGH	LOW	MED	HIGH	LOW	MED	HIGH	LOW	MED	HIGH	LOW	MED	HIGH	LOW	MED	HIGH	LOW	MED	HIGH	LOW	MED	HIGH	LOW	MED
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# Next Steps

- Running additional scenarios to propose to Employment Now
- RFP write up with approved weighted pay scale
- Upon approval - Implementation of new weighted pay scale
  - Retraining staff
  - Creating KPIs