**Welcome C/C++ Users Journal's Advanced Developers.** Whole Root™ Economic Research, Inc. offers salary information on computer processing careers through its Competitive Position™ Market Analysis and Reports.

**Competitive Position™ Market Analysis provides detailed and extensive Salary Information on Computer Processing Careers and Jobs.** The compensation statistics are illustrated and explained within graphs and presented in individual Competitive Position™ Market Reports. The reports are expressly designed for Computer Professionals and Human Resource Departments who desire up-to-date statistics on Salary Offers relative to Experience Requirements in Computer Job Markets.

Competitive Position™ Market Analysis takes advantage of a previously unused but widely and publicly available source of information: classified want ads. Individuals and employers receive detailed and extensive information about the classified ads they use to assess and realize job opportunities. The statistical analysis takes data dissipated across many pages of want ads and number crunches them into a specific relationship between salary offers and experience requirements. A confusing set of raw data is converted into clear and applicable information. Competitive Position™ Market Analysis is a valuable career and employment decision

making tool. Whole Root™ Economic Research, Inc. is in the process of obtaining a patent for its Automated Market Price Analysis System.

**The salary statistics are presented in 12 separate 45-page Competitive Position™ Market Reports each with extensive graphs, detailed text explanations and graph reading guides.** Each Market Report job title is defined by the keywords employers apply in their want ads. Programmer, Quality Assurance, Administrator and Support positions are analyzed across many Programming Language, Software and Network skills. Job titles include: C/C++ programmer; Visual Basic/PowerBuilder programmer; Oracle/Sybase Data Base administrator, programmer and support (separately); Main Frame production control, programmer and quality assurance (separately); and, LAN/UNIX administrator and support (separately).

Each Competitive Position™ Market Report includes at least 3 graphs, over 15 pages of text explanation and 3 graph reading guides. **A sample Help Desk Market Report is attached.** Below are brief explanations of each of the types of graphs.

The Average Salary Offer per Required Experience Graph presents the expected and 95% probability range of the average salary offer from entry level through 10 years of required experience within the position. A

graph reading guide is included.

The Salary Offer Distribution Graph presents information designed for those who believe that they are competitively above or below the average due to location or quality of skills and need to realistically position their salary goals. The Salary Offer Distribution is analyzed to determine the exact range of salaries above and below the average for each level of Required Experience. Dollar values are specified at the points where 2.5%, 16%, 50%, 84% and 97.5% of the want ads have lower Salary Offers. A graph reading guide is included.

The Experience Requirement Distribution Graph is designed for those interested in assessing the probability of qualifying for a position when stating salary history and expectations in cover letters and/or interviews.The Experience Requirement Distribution is analyzed to determine the exact range of years of experience above and below the average for specific intervals of Salary Offers. The number of years are specified at the points where 2.5%, 16%, 50%, 84% and 97.5% of the want ads have lower Experience Requirements. A graph reading guide is included.

Some reports include an Upward Job Mobility Graph. This information is designed for those interested in assessing the equivalent

years of experience in their present job needed to meet an experience requirement in a different type of computer processing job.The Upward Job Mobility graph compares the years of Required Experience in two related job titles each measured at the identical Salary Offers.

Competitive Position™ Market Reports are also combined into Computer Processing Job Groups. In addition to their Market Reports, the Programming, Data Base, LAN, Main Frame, Quality Assurance and Support Job Groups include an Average Salary Offer Job Group 3D Graph. This information is designed for those interested in comparing the structures of salary offers relative to experience requirements in the different job positions in a computer processing field. The curves of the average salary offer per required experience graphs of closely related and/or career track advancement jobs are placed side-by-side to form the 3D Job Group graph.

**Each Competitive Position™ Market Report is available for $15.** Special prices exist for the Computer Processing Job Groups. Online secure credit card and personal check processing enables instant downloading. Please visit the internet site: **http://www.wholeroot.com.** For additional information contact: CompetitivePosition@wholeroot.com.

All Competitive Position™ Market Reports are sold as Adobe Portable Document Format (pdf) files, compatible with all computer platforms. There is a link to Adobe's free pdf reader download site.

The goal of Whole Root™ Economic Research, Inc. is to bring detailed and extensive market analysis to individuals and improve their decision making. Competitive Position™ Market Analysis and Market Reports is a fulfillment of this mission. Its purpose is to improve the ability of individuals to correctly assess their salary opportunities and companies to meet their employment goals. Whole Root™ Economic Research, Inc. is the first to provide affordable market analysis designed specifically for the computer professional and the small business employer.

Copyright. © 1996. Whole Root™ Economic Research, Inc.

# Competitive Position™
# Market Report

**Release Date: July 20, 1996.**

# HELP DESK

**Based on Data from July 9 through December 31, 1995.**

*Whole Root*

## Economic Research™, Inc.

*Providing Market Analysis*
*to Individuals for*
*Better Decision Making.*

**Copyright © 1996, by Whole Root™ Economic Research, Inc.**

**All rights reserved.**

This License allows a single user to store, backup and print this Competitive Position™ Market Report. You must reproduce the Whole Root™ Economic Research, Inc. copyright notice on all prints. You may not modify, network, sell, subscribe, loan, electronically transfer or distribute this Competitive Position™ Market Report in whole or in part.

Whole Root™ Economic Research, Inc. has carried out the Competitive Position™ Market Analysis and prepared the Competitive Position™ Market Report according to accepted statistical standards. The statistics present information about the data source. Possible biases and other errors may exist within the data source that Whole Root™ Economic Research, Inc. is not responsible for. Individual job placements can not be identified. Job placement and/or salary improvement is not guaranteed or offered. The New York Times is not associated with, does not endorse, and is not responsible for Competitive Position™ Market Analysis, Competitive Position™ Market Reports and Whole Root™ Economic Research in anyway.

# Welcome

The goal of Whole Root™ Economic Research is to bring detailed and extensive market analysis to individuals and improve their decision making. Competitive Position™ market analysis is a fulfillment of this mission. Its purpose is to improve the ability of individuals to correctly assess their salary opportunities and companies to meet their employment goals. Whole Root™ Economic Research is the first to provide affordable market analysis designed specifically for the computer professional and the small business employer.

Competitive Position™ market analysis takes advantage of a previously unused but widely and publicly available source of information: classified want ads. Individuals and employers receive detailed and extensive information about the classified ads they use to assess and realize job opportunities. The statistical analysis takes data dissipated across many pages of want ads and number crunches them into a specific relationship between salary offers and experience requirements. A confusing set of raw data is converted into clear and applicable information. Competitive Position™ market analysis is a valuable career and employment decision making tool.

Robert Gerald Vivona

Whole Root™ Economic Research, Inc.

# Table of Contents

1. Introduction. 5

2. Want Ads as a Source for Market Information. 8

3. Keyword Definition of Help Desk Job. 10

4. Characteristics of the Sample Data. 11

5. Average Salary Offer. 13

6. Distribution of Salary Offers. 15

7. Distribution of Experience Requirements. 19

9. Upward Job Mobility. 22

10. The Graphs in this Market Report. 23

11. **Graph: Average Salary Offer per Required Experience**. 24

12. **Graph: Salary Offer Distribution**. 25

13. **Graph: Experience Requirement Distribution**. 26

14. **Graph: Upward Job Mobility to Data Base Support**. 27

15. **Graph: Upward Job Mobility to LAN Support**. 28

## Appendix

16. Graph Explanation: Average Salary Offer per Required Experience. 29

17. Graph Explanation: Salary Offer Distribution. 35

18. Graph Explanation: Experience Requirement Distribution. 42

# Introduction

Competitive Position™ market analysis provides detailed and extensive salary information on computer processing jobs. It is specifically designed for computer professionals and human resource departments who desire up-to-date specifics on salary offers relative to experience requirements in computer job markets.

Competitive Position™ market analysis takes the pulse of the computer job market through an unused but widely available data source: the vital signs are measured in the statistical analysis of classified want ads. In this Market Report the classified want ads are grouped by keywords into the Help Desk job skill category. The Help Desk average salary offer for each year of required experience from entry level to ten years is reported. The variations in salary offers and experience requirements across want ads are presented to specify the salary and experience ranges and quantify the qualitative differences between want ad job positions. The equivalent years of experience to qualify for data base and LAN support want ads are calculated.

There are 5 graphs in the Help Desk Market Report. The Average Salary Offer Per Required Experience graph presents the expected and 95% probability range of the average salary offer from entry level to 10 years of required experience. Included in this graph is an explanation of the mathematical model and the statistical significance test results. The

Salary Offer Distribution graph presents information for those who believe that they are competitively above or below the average due to location or quality of skills and need to realistically position their salary goals. The Experience Requirement Distribution graph presents information for those interested in assessing the probability of qualifying for a want ad job position when stating their salary history and expectations in cover letters and/or interviews. Two Upward Job Mobility graphs present information for those interested in assessing the equivalent years of experience in their present job needed to meet an experience requirement in data base and LAN support jobs.

The reader should always remember the source of the data. Classified want ads do not represent actual job contracts. Instead they are an effort to elicit interest in a process of employment negotiation. The initial bargaining positions of employers are analyzed in the Help Desk Market Report. The demand and supply conditions in the marketplace directly determine the bargaining positions of employers. In this way the market conditions are reflected in the collection of want ads. Please read more about this in the **Want Ads as a Source for Market Information** section below.

Competitive Position™ Market Analysis applies standard statistical techniques. A probability distribution hypothesis is applied to estimate the properties of the population of want ads from a sample. The term

population refers to all of the Help Desk want ads in the New York Times. The want ads with all of the necessary information form only about 2% of the population (total). The sample is taken and statistical theory is applied to estimate the salary properties of the population. It should be realized that the salary offers are estimates. Probability confidence intervals are provided and should be utilized. Please read more about the sample in the Characteristics of the Sample Data section below.

As a scientific study the Competitive Position™ market analysis for the Help Desk Market Report can be followed to reproduce the salary information presented in the graphs. The methodology has several steps:

1. abstract and code the keyword job descriptions from the want ads into a data base;
2. apply the standard statistical techniques for simple regressions available in commercial statistics software;
3. hypothesis test the best functional form for the regression equation;
5. test for heteroscedasticity;
6. create computer graphics of: the regression analysis with confidence intervals; and; the mean and standard deviation descriptive statistics with confidence intervals; and,
7. document the data source, coding protocol, and statistical results.

## Want Ads as a Source for Market Information

Classified want ads collectively reflect the competitive demand and supply conditions of the computer job market. Each want ad states an employers initial bargaining position of potential salary versus desired qualifications. The goal of the listing is to elicit the best qualified candidate within the employers cost constraints. This goal creates a competitive market for computer professionals that is displayed within the collection of classified want ads.

The success of a want ad depends on its competitive position relative to other want ads. If the salary is too low relative to the experience requirement, few suitable professionals will submit resumes. If the salary is too high relative to the experience requirement, the employer may overextend expenses for the desired job performance. The success of a want ad depends upon the cost to performance constraints of the employer relative to the salary offers and experience requirements listed in other want ads. The competition between employers for the best resumes restricts the distribution of salary offers relative to experience requirements around central tendency, or average, values.

The income level of employers determines their cost constraints and, in turn, the demand for computer professionals. The connection between employer’s income and computer job market demand is reflected in the level of salary offers relative to experience requirements. When sales are

good for employers the demand for computer professionals is strong and salary offers are high. When sales are bad for employers the demand for computer professionals is weak and salary offers are low. Importantly, the differences in income levels between employers accounts for some of the variation in salary offers.

The supply of computer professionals determines the level of salary offers necessary for the employer to entice the best qualified resume applications. An excess supply of computer professionals is reflected in low salary offers. A short supply of computer professionals forces employers to make high salary offers. Employers adjust their salary offers and experience requirements to reflect the quality of resumes elicited by their want ads.

The competitive demand for and supply of computer professionals is reflected in the average, and distribution, of the salary offers and experience requirements of job listings. The average salary offer is determined by the performance needs, sales revenue and cost constraint of employers in combination with the availability and alternative opportunities of computer professionals. The distribution of salary offers is determined by: the competitive rivalry between employers; the variation in profitability of employers; the quality of the skills desired and the performance needs for a given experience requirement; and, the location of the job.

One of the best aspects of the Competitive Position™ market analysis is that the classified employment section is today's job market news. Each want ad is written in consideration of an employer's current needs and capabilities. Collectively the classified want ads reflect up-to-date demand and supply conditions.

Other sources of salary relative to experience information are biased away from current market conditions. For instance, surveys of job holders are historical reflections of: market conditions at the time of employment; and, subsequent performance and cost of living raises. Surveys of people initially employed with a company 5 to 10 years ago may not be relevant to today's market conditions. Competitive Position™ market analysis provides salary and experience information about today's Help Desk job market.

## Keyword Definition of Help Desk Job

The Help Desk job is defined by the keywords employers apply in their want ads to characterize the responsibilities and qualifications of the available position. A pair of keywords from the classified want ads define the Help Desk job. In general the pair of keywords includes: 1. computer processing responsibility descriptors; and, 2. computer processing software skill terms. The keywords refer to Help Desk duties and the specific skills required to perform them. They have particular definitions that involve

little or no qualitative interpretation.

The keywords used in New York Times classified want ads to define the Help Desk job:

1. computer processing duty, responsibility or function:

   Help Desk, Software Installer, MIS Support, Wordprocessing/Spreadsheet Support, Upgrading PC Hardware, Hardware Maintenance.

2. computer processing software skill:

   Lotus 1-2-3, MS Office, Amipro, Photoshop, Framemaker, Pagemaker, Quark, Freelance Graphics.

A keyword from the duty category was required, while one from the skill category was optional, for a want ad to be included in the Help Desk data sample.

## Characteristics of the Sample Data

Competitive Position™ Market Analysis selected the New York Times as its source for wants ads. One advantage of this single source of want ads is that everyone who uses the Help Desk Market Report can access the data. Just open the employment section and read the want ads. You will soon become familiar with the source of data and know specifically what is being analyzed.

The New York Times is the best single source for computer job

opportunities in the United States and internationally. While it is true that a majority of computer jobs listed in the N.Y. Times classified want ads are located in the New York Metropolitan area, there are many positions in other States and Nations. The high density of computer jobs in the Tri-State region of New York City makes it an extremely broad and deep regional market with strong ripple effects throughout the world.

The Help Desk Market Report can be utilized by computer professionals in distant regional markets as a bench mark. Cost of living information, as well as an assessment of regional competitive pressures, can be added to fit one's own needs.

Competitive Position™ market analysis sampled 79 Help Desk want ads in 26 weeks (1/2 Year) of the New York Times Sunday Employment section from July 9 through December 31, 1995. To be included in the data base a want ad had to have: 1. function and skill keywords; 2. a salary offer; and, 3. an experience requirement. This restricted the sample to approximately 2% of the Help Desk want ads listed under the employment section headings: Computer; and, Programmer Analyst.

The Help Desk sample is large enough for statistical analysis. There are several notable aspects of the sample. It is unusual for a want ad to list an education requirement. Only a few ads cited Windows NT, Unix or Macintosh operating system skills. Only 12 ads specified hardware upgrade or maintenance skills. Only 4 ads named desktop publishing software:

Photoshop; Framemaker; Pagemaker; Quark; and, Freelance Graphics. These specialty areas of the Help Desk job had samples too small for subcategory statistical analysis.

## Average Salary Offer

The Help Desk Salary Offer per Required Experience graph presents the average and range of the salary offers for each year of required experience between entry level and ten years. Please examine the explanation in the appendix of this Market Report to correctly read, understand and get the most out of the graph. It was statistically found that a line was the best fitting mathematical form. The statistical test results indicate that the relationship between salary offer and required experience is highly significant.

The black line is the expected average salary calculated from the sample of Help Desk want ads. It is the best estimate of the average salary for each year of required experience for the entire population of want ads. The average salary line is the mid point of the sample, it minimizes the excess salary offers above and below it. The average should not be interpreted as the only salary offer, there may be significant numbers of offers above and below. The distribution graphs should be examined to gauge the tightness and spread of the Help Desk market around the average salary offer line.

The statistical analysis indicates that the entry level average salary offer is $25,200 and increases by $4,500 with every year of required experience. The statistical significance tests indicate: 1. there is less than a .01% (one ten-thousandth) chance that there is no relationship between salary offers and experience requirements; 2. there is less than a .01% (one ten-thousandth) chance that the entry level salary can not be defined; and, 3. there is less than a .01% (one ten-thousandth) chance that the yearly increase in salary offer can not be defined. These results imply a high level of quality for the average salary offer numbers.

The two gray curves present the 95% confidence intervals of the entry level and the yearly increase in the average salary offer. In statistical theory it is realized that a different sample of want ads could create a divergent best fit line. The probable range of the potential divergence is calculated with a 95% degree of accuracy. This 95% probability range is presented in the two gray curves in the graph. There is a 95% level of confidence that the average salary is within the range presented. It should be noticed that through 5 years of experience the range is no more than $2,500 above and below the expected salary offer. Also observe that the 95% probability range gets continually larger beyond 5 years. This indicates that the average salary offer is more difficult to specify as the experience requirement becomes extremely high.

The two gray curves cross at the most probable salary offer and

experience requirement point. Around this central tendency point the 95% confidence interval of the sample mean can supplement the range of the average salary offer. The mean salary offer of the entire sample is presented in the “Overall” curve in the Help Desk Salary Distribution graph. The average salary offer range from $34,500 to $38,620 should be considered as the 95% probability interval in the central tendency area between 2.5 and 3.5 years.

The Average Salary Offer per Experience Requirement graph depicts the central tendency of the salary offers for each year of experience. The expected average salary offer for each year, the middle numbers in the graph, are the best estimates of the central points. The 95% probability range takes account of the possibility of a difference in the results for the population of Help Desk want ads as a whole. There is a strong degree of confidence that the average salary for the population of want ads is within this range. The 95% probability range of the mean of the sample should be applied to augment the average salary offer confidence interval around the central tendency point. The average salary offer is the expected market value, however there are want ads scattered above and below these central points.

## Distribution of Salary Offers

The variation in the salary offers at each year of required experience

is determined by a number of factors that are not presented in the want ads. Since these factors have no easily measured representative terms or quantities in the want ads, it is not possible to directly statistically analyze their effects. However, the variation of the sample of want ads around the average salary offers can be statistically analyzed to indirectly understand the effects of these non-observable factors. An assessment of the effect of all of the factors of variation is presented in the Salary Offer Distribution graph. Please examine the explanation in the appendix of this Market Report to correctly read, understand and get the most out of the graph. Please refer to the **Want Ads as a Source for Market Information** section, above, for a discussion of the factors of variation.

The $R^2$ value of the Average Salary Offer per Experience Requirement line is .570. The $R^2$ statistic is a measure of the proportion of the variations from the sample mean to the regression line, or average salary offer line, relative to the variation from the sample mean to the actual sample data points. The percentage of the variation explained by the average salary offer line is depicted in the $R^2$ statistic. As the $R^2$ approaches 1 (one, unity) the average salary offer line becomes less and less a central tendency and more and more the exact and only possible salary offer made for a specific experience requirement. A reasonable degree of variability should be expected, due to the many factors that can influence individual want ads. In the Help Desk job, 57% of the variability

between want ads is explained by the average salary offer line. This indicates that 43% of the variation between want ads is explained in the areas above and below the average salary offer line. There are no guidelines for an acceptable $R^2$ level. Instead the $R^2$ should be considered as an assessment of the degree of the salary offers above and below the average salary offer line. Help Desk want ads are fairly tightly clustered around the average salary offer line.

The Help Desk Salary Offer Distribution graph presents the variation in salary offers in want ads Overall and for select experience requirement levels. The relevant segments in the Help Desk job market are: 1 year; 2 years; 3 years; and, between 4 and 10 years of required experience. The number of want ads for each experience level of the sample are listed. The greater the number of want ads the more reliable the information.

The mean and its 95% confidence interval is provided for each experience segment. The significance of the Overall mean and its 95% probability range is discussed in the Average Salary Offer section above. The mean and its 95% confidence interval for each experience level is provided as a quality check. Either the mean itself or a large part of its confidence interval lies within the respective 95% probability range in the Average Salary per Required Experience graph. This can be easily verified by examining the two graphs.

In each experience segment there are two confidence intervals around the mean. They each display a probability estimate of the range of salary offers above and below the mean. The 68% confidence interval is constructed by adding and subtracting one (±1) standard deviation from the mean. The standard deviation is a measure of the degree of variability of the salary offers and is specified in each experience segment graph. It is estimated that 68% of all want ads have salary offers within this range. The 95% confidence interval is constructed by adding and subtracting 1.96 standard deviations from the mean. It is estimated that 95% of all want ads have salary offers within this range.

The 68% and 95% salary ranges can be utilized to estimate the percentage of want ads at or below particular salary offer points. There are four points to be considered:

1. The low point of the 95% confidence interval. 2.5% of the want ads have salary offers at or below this point.
2. The low point of the 68% confidence interval. 16% of the want ads have salary offers at or below this point.
3. The high point of the 68% confidence interval. 84% of the want ads have salary offers at or below this point.
4. The high point of the 95% confidence interval. 97.5% of the want ads have salary offers at or below this point.

The expected salary offer for each year of required experience from the

Average Salary Offer per Required Experience graph is the mid point with 50% of want ads having salary offers above and below.

The estimates of the percentages of want ads with salary offers below a specified point can be utilized to assess salary opportunities. Salary offers outside of the 95% confidence interval should be considered as extreme, unusual and outlying points. The high and low points of the 68% confidence interval are within the upper and lower fifth of salary offers. These points should be considered as representative of the salary offers for the best and worst situated jobs.

## Distribution of Experience Requirements

The Help Desk Experience Requirement Distribution graph depicts the mean and variation of the required experience for the Overall sample of want ads and select salary ranges. The statistics depict the most demanded level of experience overall and for particular ranges of salary offers. The ability to qualify for want ads can be inferred from this information. Please examine the explanation in the appendix of this Market Report to correctly read, understand and get the most out of the graph.

The relevant segments in the Help Desk job market are: $18,000-$25,000; $28,000-$30,000; $32,000-$35,000; $37,000-$40,000; and, $43,000-$70,000. The number of want ads for each experience level of the sample are listed. The greater the number of want ads the more reliable

the information.

The mean and its 95% confidence interval is provided for each salary offer segment. In each graph the mean depicts the expected, most likely and most frequent experience requirement listed in the selected sample of want ads. The possibility of a different sample of want ads creating a divergent sample mean is accounted for in the 95% probability range. In each salary segment graph there is a 95% confidence level that the mean experience requirement lies within this range.

The variation in experience requirements is measured by the multiple of the standard deviation away from the mean. The standard deviation is a measure of the degree of variability of the experience requirements and is specified in each salary offer segment graph. Notice that the standard deviation is larger for progressively higher salary ranges. While there are few want ads with high experience requirements at low salary levels, there are some want ads with low experience requirements at high salary levels.

In each salary offer segment there are two additional confidence intervals around the mean. They each display a probability estimate of the range of experience requirements above and below the mean. The 68% confidence interval is constructed by adding and subtracting one (±1) standard deviation from the mean. It is estimated that 68% of all want ads have experience requirements within this range. The 95% confidence

interval is constructed by adding and subtracting 1.96 standard deviations from the mean. It is estimated that 95% of all want ads have experience requirements within this range.

The 68% and 95% salary ranges together with the mean can be utilized to estimate the percentage of want ads at or below particular experience requirement points. There are five points to be considered:

1. The low point of the 95% confidence interval. 2.5% of the want ads have experience requirements at or below this point.
2. The low point of the 68% confidence interval. 16% of the want ads have experience requirements at or below this point.
3. The mean represents the mid point of the distribution. 50% of the want ads have experience requirements at or below this point.
3. The high point of the 68% confidence interval. 84% of the want ads have experience requirements at or below this point.
4. The high point of the 95% confidence interval. 97.5% of the want ads have experience requirements at or below this point.

The estimates of the percentages of want ads with experience requirements below a specified point can be utilized to assess job opportunities. Experience requirements outside of the 95% confidence interval should be considered as extreme, unusual and outlying points. The high and low points of the 68% confidence interval are within the upper and lower fifth of experience requirements. For each salary range these

points should be considered as representative of the experience requirements made for the best and worst situated jobs. The best jobs in a salary range will have the experience requirement of the low point of the 68% confidence interval. The worst jobs in a salary range will have the experience requirement of the high point of the 68% confidence interval.

## Upward Job Mobility

There are two Upward Job Mobility graphs for data base and LAN support jobs. The purpose of these two graphs is to present the average experience requirement in a Help Desk job necessary to qualify for an experience requirement listed in a data base or LAN support want ad. The graph is constructed by comparing the average experience requirements at the same salary offers between the Help Desk and either the data base or the LAN support jobs.

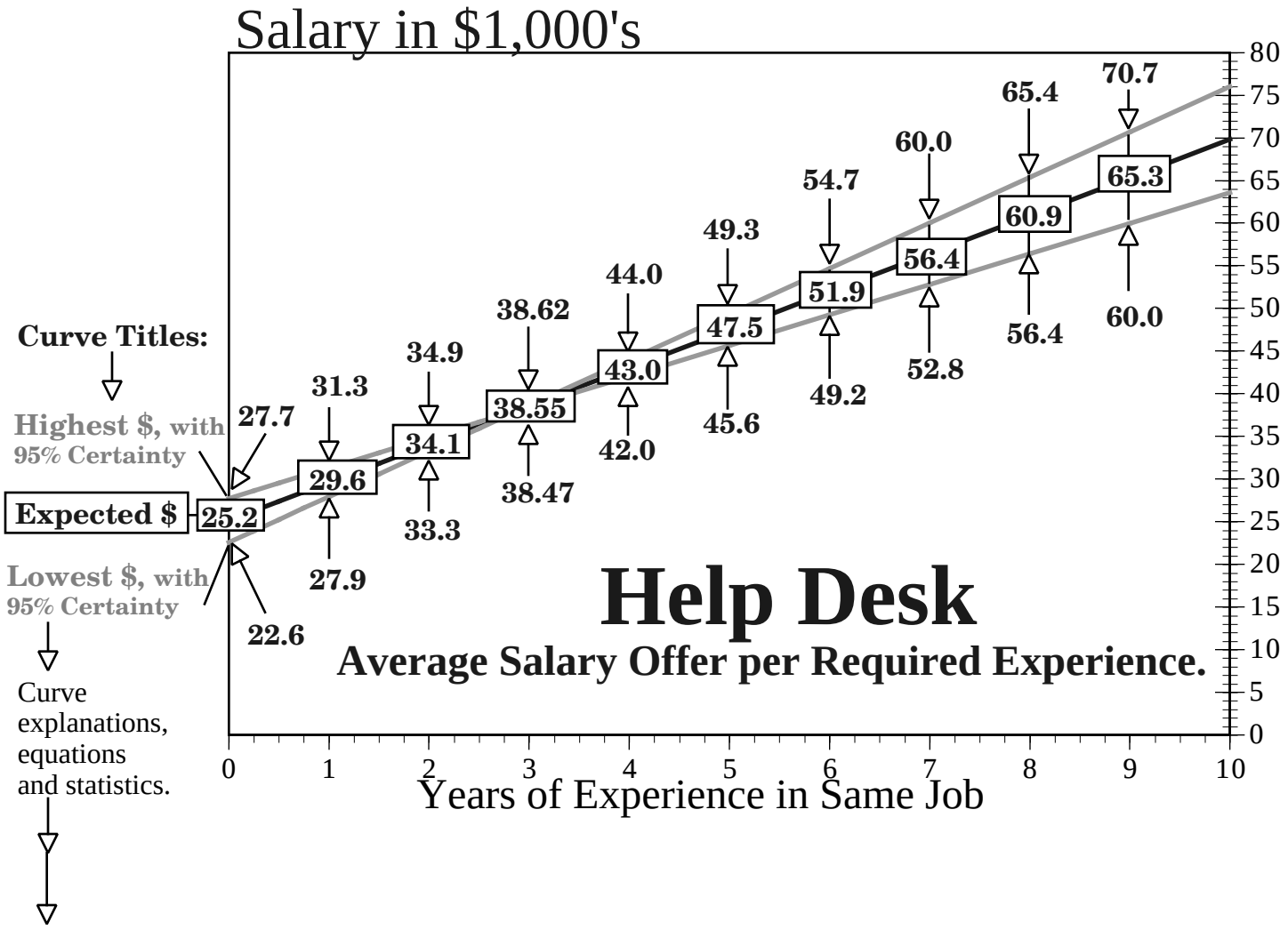
Both graphs begin at the 6 month experience requirement for the data base and LAN support jobs. The reason is that the entry level salary is higher for the Help Desk job. However the yearly increase in the salary offers for data base and LAN support jobs are larger. After 6 months it takes a larger amount of Help Desk experience to equal a specific level of experience requirement in the data base and LAN support jobs.

Please be aware that switching to data base and LAN support jobs requires more than experience in a Help Desk job. Specific training with

data base and LAN software is another requirement for most want ads.

## The Graphs in this Market Report

There are 5 graphs in the Help Desk Market Report. The Average Salary Offer Per Required Experience graph presents the expected and 95% probability range of the average salary offer from entry level to 10 years of required experience. Included in this graph is an explanation of the mathematical model and the statistical significance test results. The Salary Offer Distribution graph presents information for those who believe that they are competitively above or below the average due to location or quality of skills and need to realistically position their salary goals. The Experience Requirement Distribution graph presents information for those interested in assessing the probability of qualifying for a want ad job position when stating their salary history and expectations in cover letters and/or interviews. Two Upward Job Mobility graphs present information for those interested in assessing the equivalent years of experience in their present job needed to meet an experience requirement in data base and LAN support jobs.




Each Curve indicates that salary: 1. is low at entry level; and, 2. increases by a fixed amount each year. This relationship between experience and salary implies a Linear Equation:

**$** = a + b(YrsExp);

where: $ = Salary; a is the statistically estimated intercept; b is a statistically estimated slope constant; and, YrsExp = Years of Experience in Same Job.

The **Highest $** and **Lowest $** curves are constructed from the upper and lower 95% probability values of a, the intercept, and b, the slope constant, terms. The curves cross at the central tendency salary and experience point of the entire sample. The Equations of the 3 Curves are:

**Highest $, with 95% Certainty** $ = 27.7 + 3.6(YrsExp)

**Expected $** **$** = 25.2 + 4.5(YrsExp)

**Lowest $, with 95% Certainty** $ = 22.6 + 5.3(YrsExp)

## Statistical Significance Values and Tests.

**Regression Summary:**

| | |
|---|---|
| Count | 79 |
| Num. Missing | 0 |
| R | .755 |
| R Squared | .570 |
| Adjusted R Squared | .565 |
| RMS Residual | 5.688 |

**Analysis of Variation Table:**

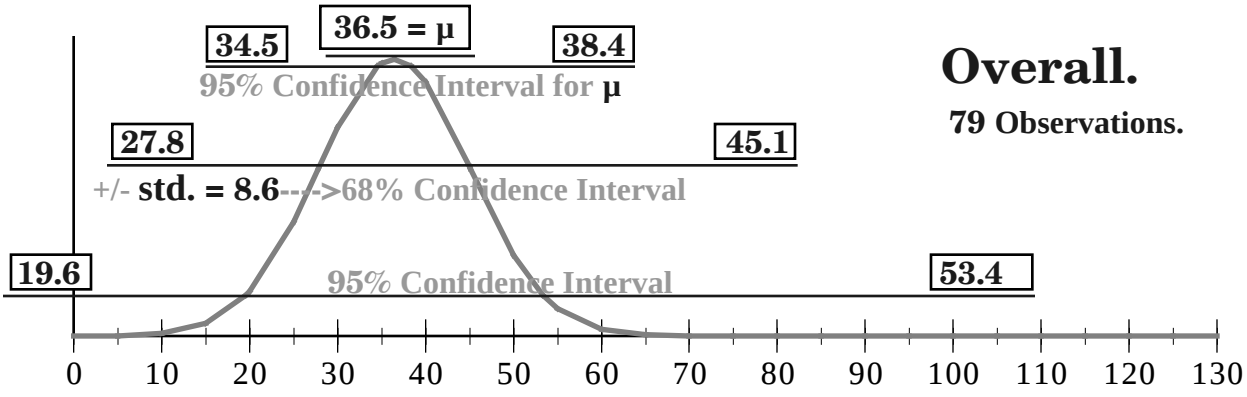
| | DF | Sum of Squares | Mean Square | F-Value | P-Value |
|---|---|---|---|---|---|
| Regression | 1 | 3304.105 | 3304.105 | 102.114 | <.0001 |
| Residual | 77 | 2491.490 | 32.357 | | |
| Total | 78 | 5795.595 | | | |

**Regression Coefficients:**

| | Coefficient | Std. Error | Std. Coeff. | t-Value | P-Value |
|---|---|---|---|---|---|
| Intercept | 25.150 | 1.289 | 25.150 | 19.512 | <.0001 |
| HelpDesk Experience | 4.466 | .442 | .755 | 10.105 | <.0001 |

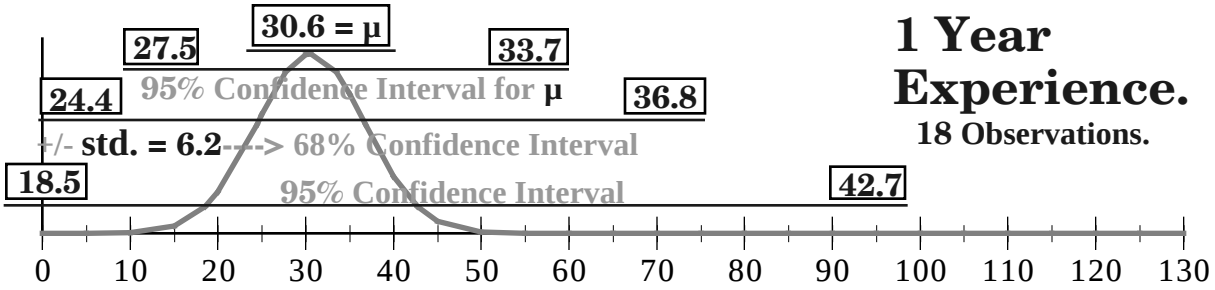
# Help Desk Salary Offer Distribution

**Key: Salary in $1,000's; μ = Mean; std. = Standard Deviation.**



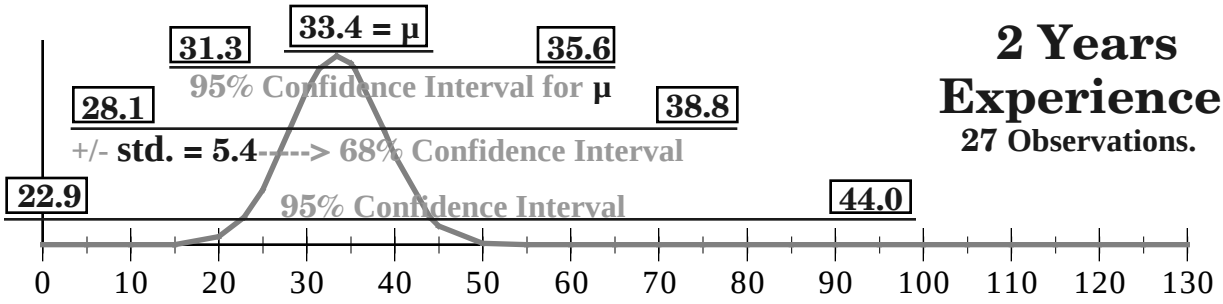

## Overall.

**79 Observations.**



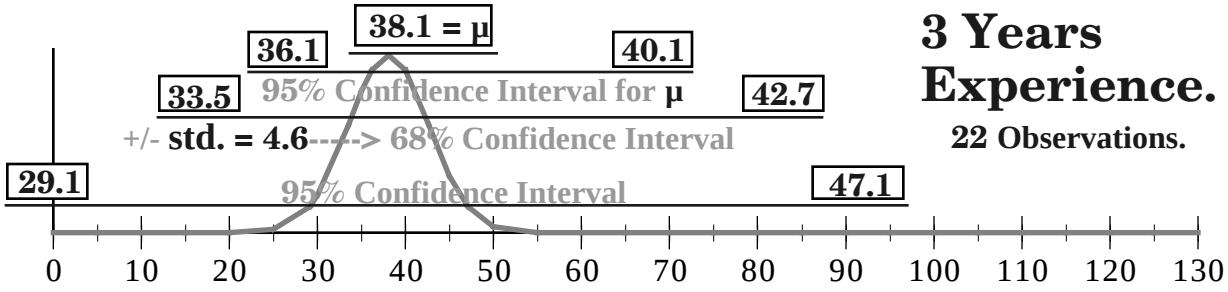

## 1 Year Experience.

**18 Observations.**



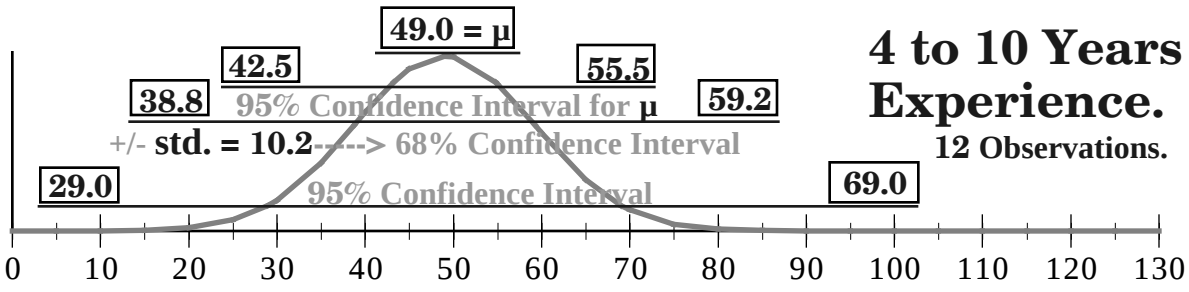

## 2 Years Experience.

**27 Observations.**




## 3 Years Experience.

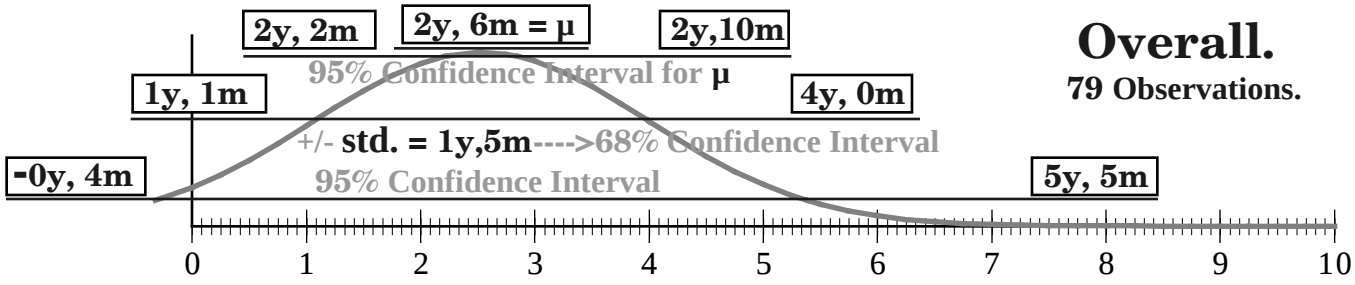
**22 Observations.**




## 4 to 10 Years Experience.

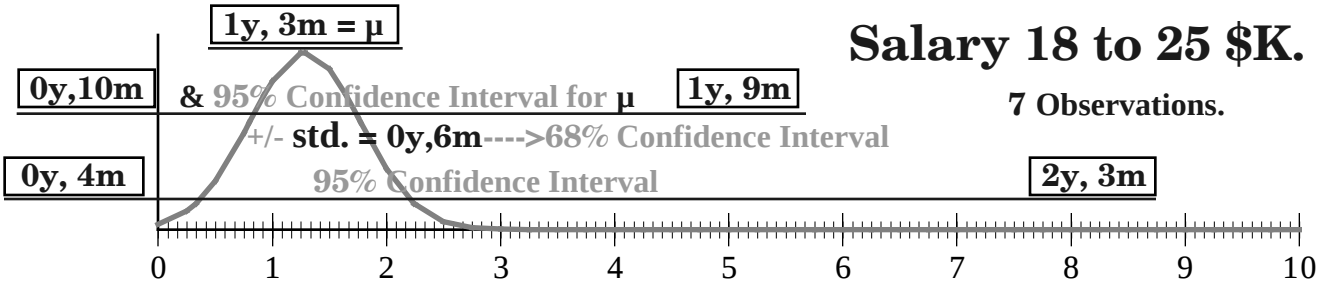
**12 Observations.**

# Help Desk Experience Requirement Distribution



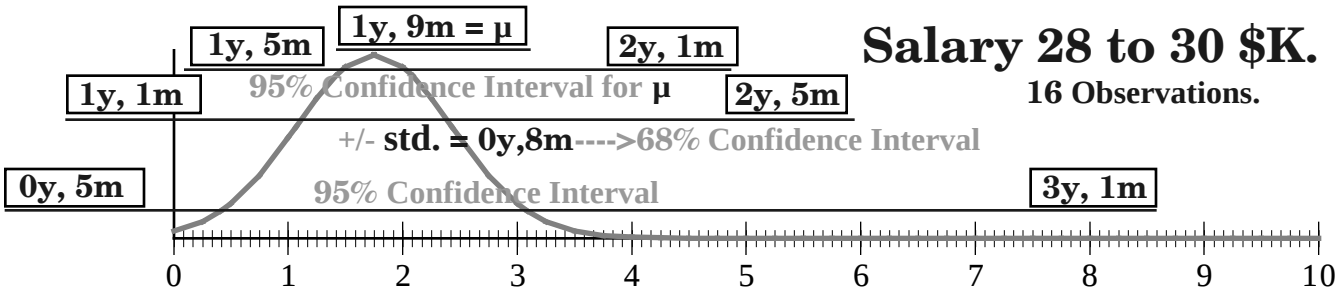

## Overall.

**79 Observations.**



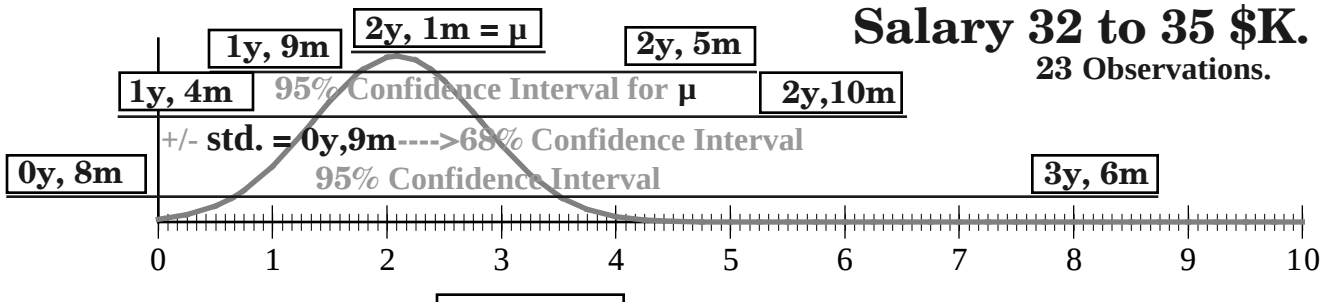

## Salary 18 to 25 $K.

**7 Observations.**



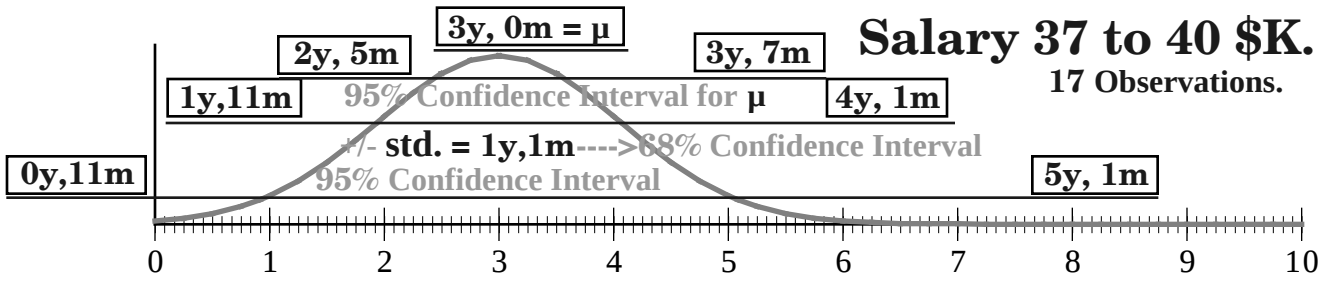

## Salary 28 to 30 $K.

**16 Observations.**



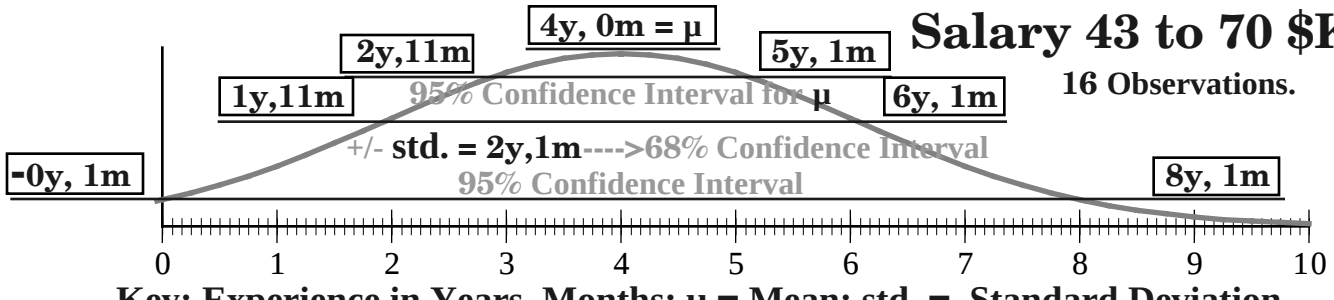

## Salary 32 to 35 $K.

**23 Observations.**




## Salary 37 to 40 $K.

**17 Observations.**

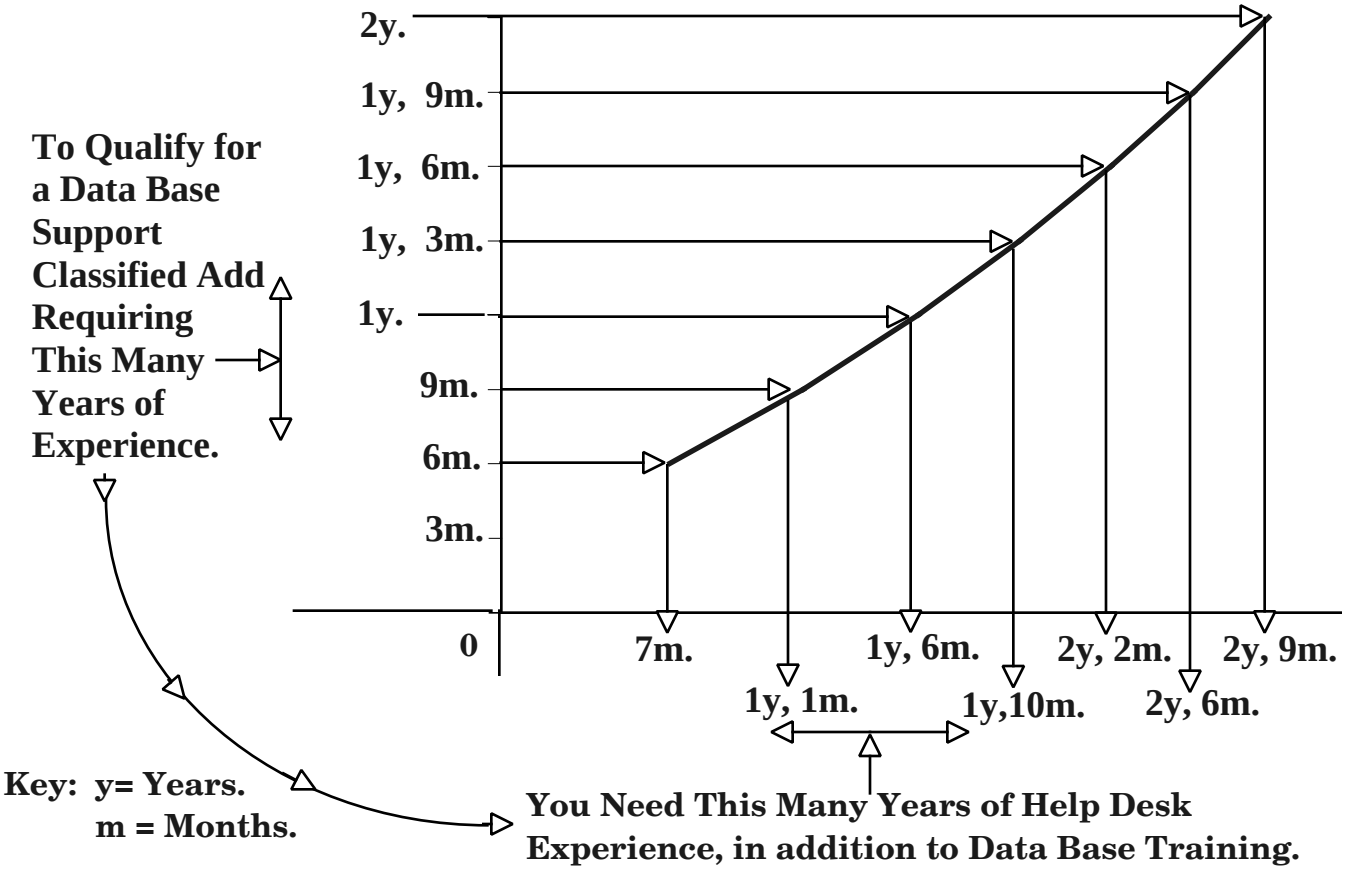



## Salary 43 to 70 $K.

**16 Observations.**

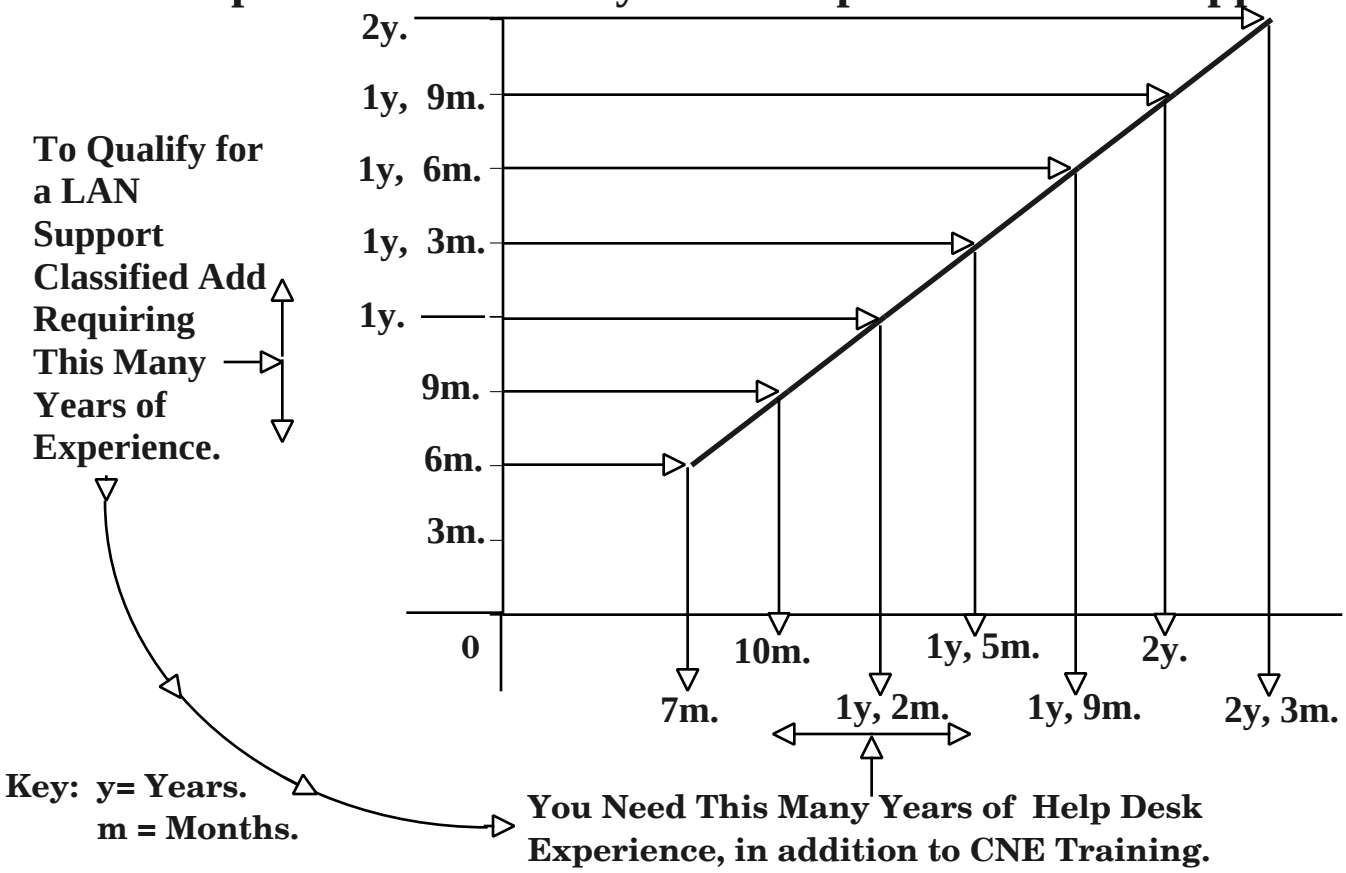
**Key: Experience in Years, Months; μ = Mean; std. = Standard Deviation.**

# Upward Job Mobility from Help Desk to Data Base Support.

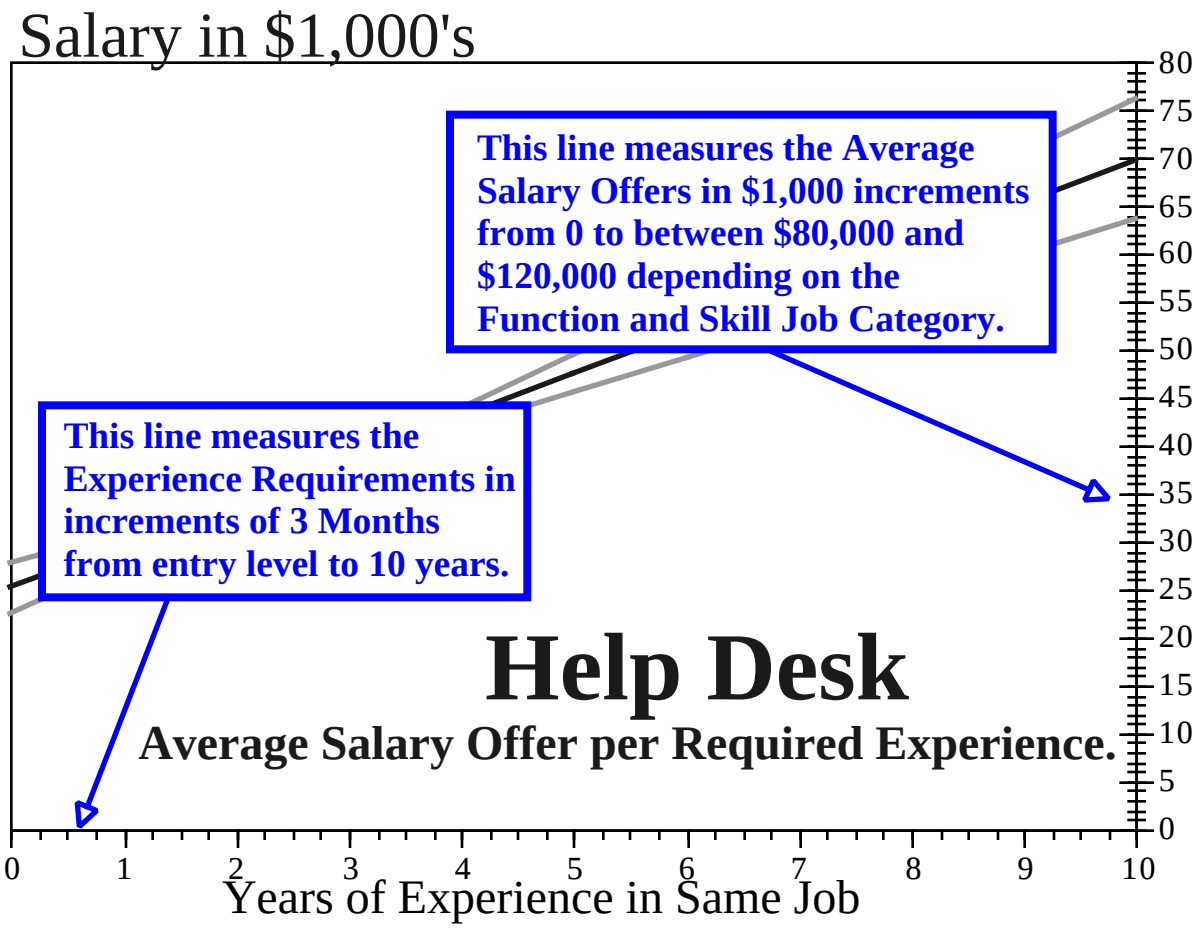



The Upward Mobility Curve from Help Desk to Data Base Support compares the years of experience at the same Salary Offers. Each Salary Offer is an indication of the skill and ability of the worker, thus, equal salary can be associated with equal value to the employer. **The curve suggests that in applying for a Data Base Support job requiring a specific level of experience the applicant may be able to compete for the job with an explicitly larger amount of experience in a Help Desk job**. **This only applies if all other qualifications, other than experience in the Data Base Support job, are met–additional training and skills may also be required.**

# Upward Job Mobility from Help Desk to LAN Support.

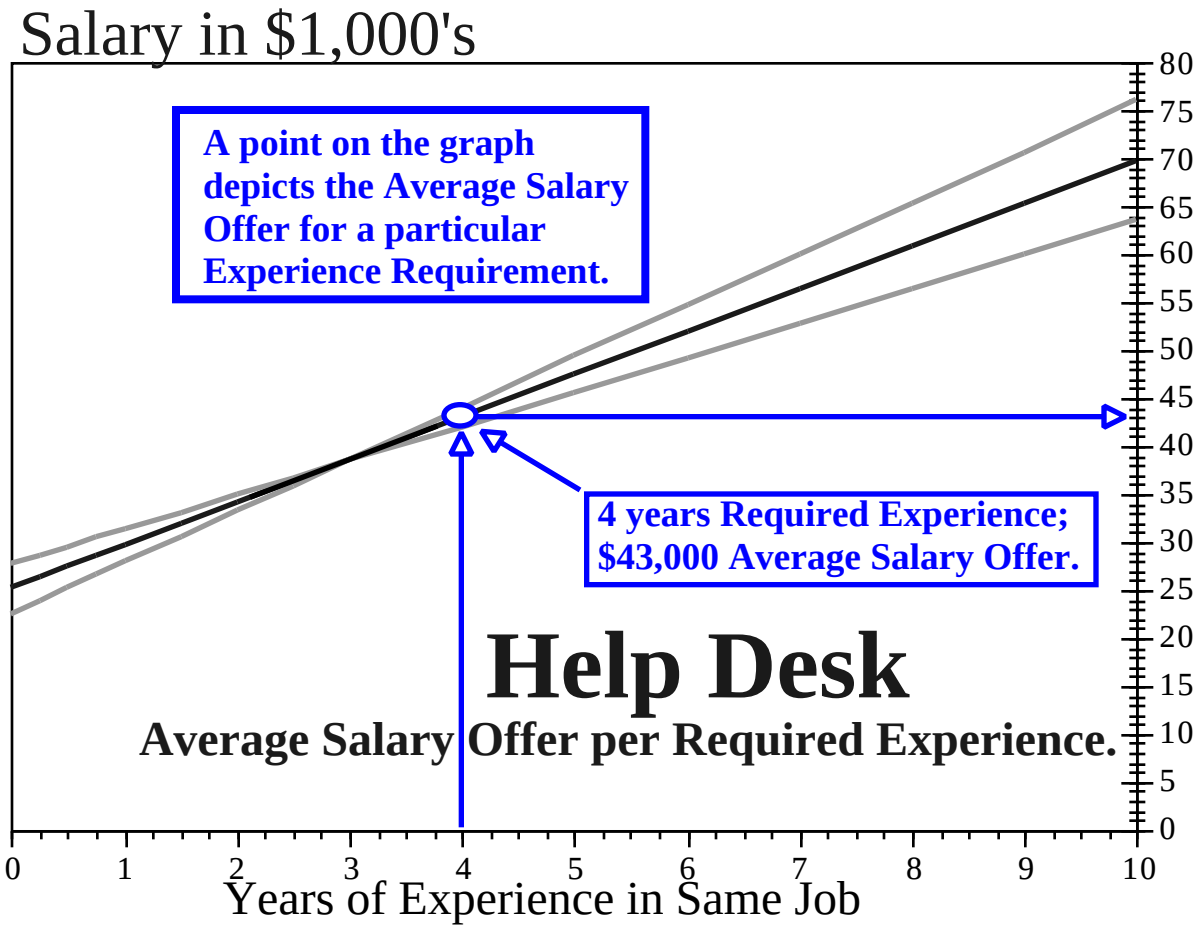



The Upward Mobility Curve from Help Desk to LAN Support compares the years of experience in the two jobs with the same salary. Each salary is an indication of the skill and ability of the worker, thus, equal salary can be associated with equal value to the employer. **The curve suggests that in applying for a LAN Support job requiring a specific level of experience the applicant may be able to compete for the job with an explicitly larger amount of experience in a Help Desk job**. **This only applies if all other qualifications, other than experience in the LAN Support job, are met–additional training and skills may also be required.**



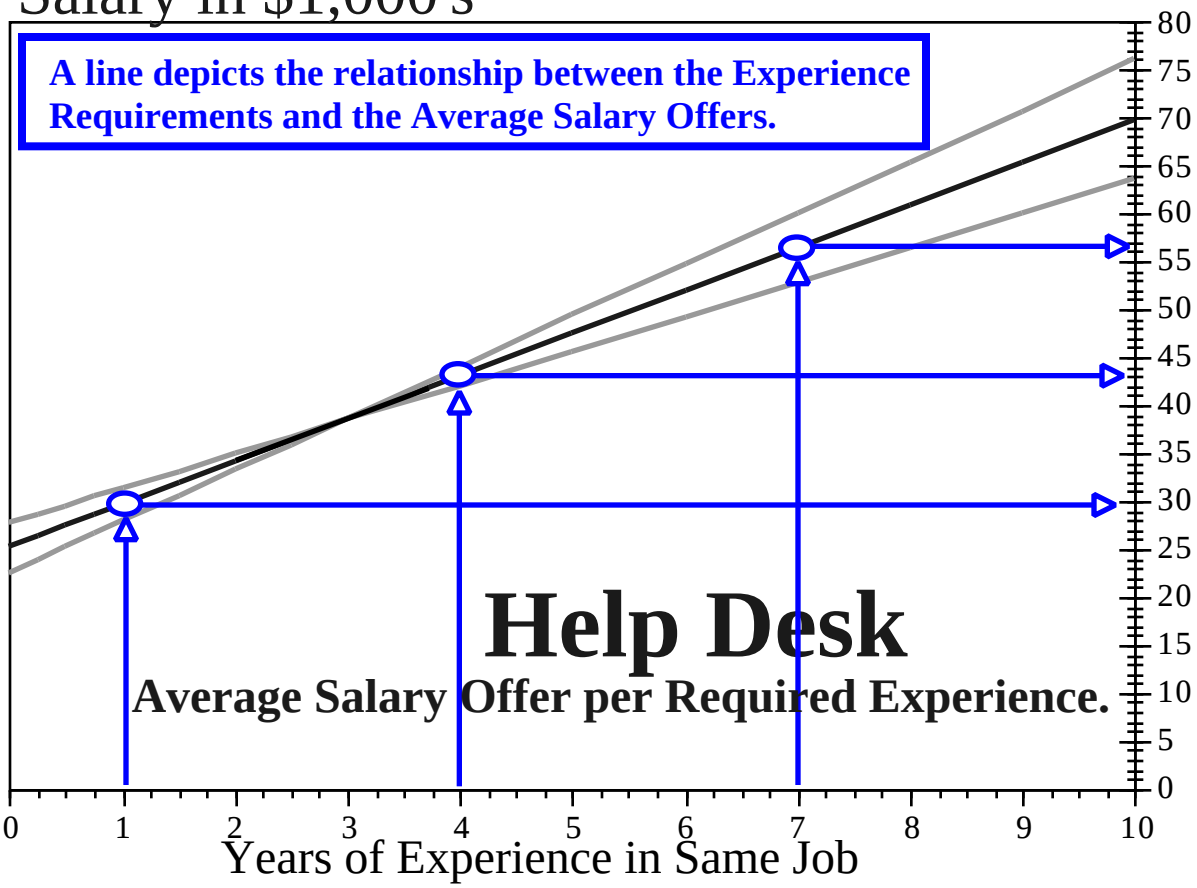

**Competitive Position™ Market Report**

Graph Explanation: Average Salary Offer per Required Experience.



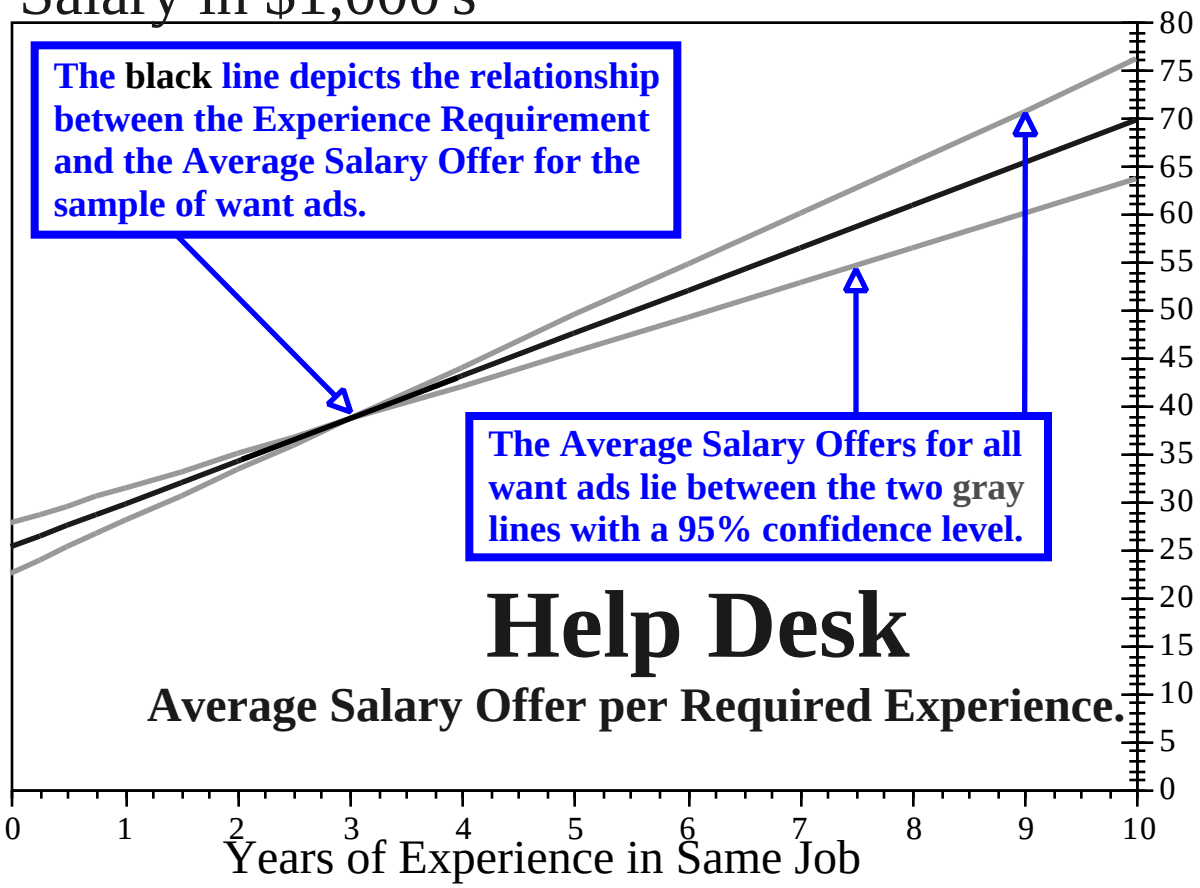

**Competitive Position™ Market Report**

Graph Explanation: Average Salary Offer per Required Experience.



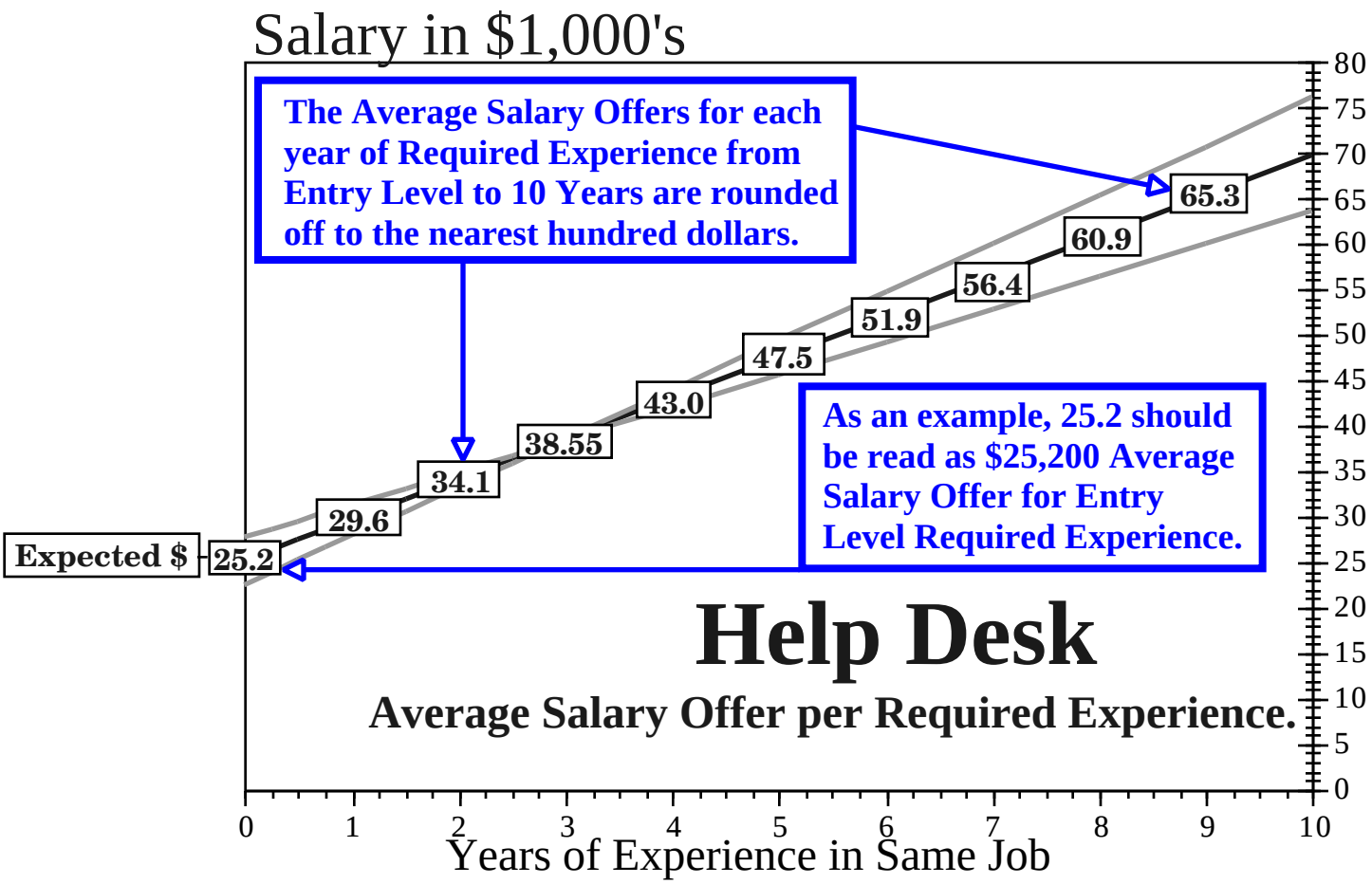

**Competitive Position™ Market Report**

Graph Explanation: Average Salary Offer per Required Experience.



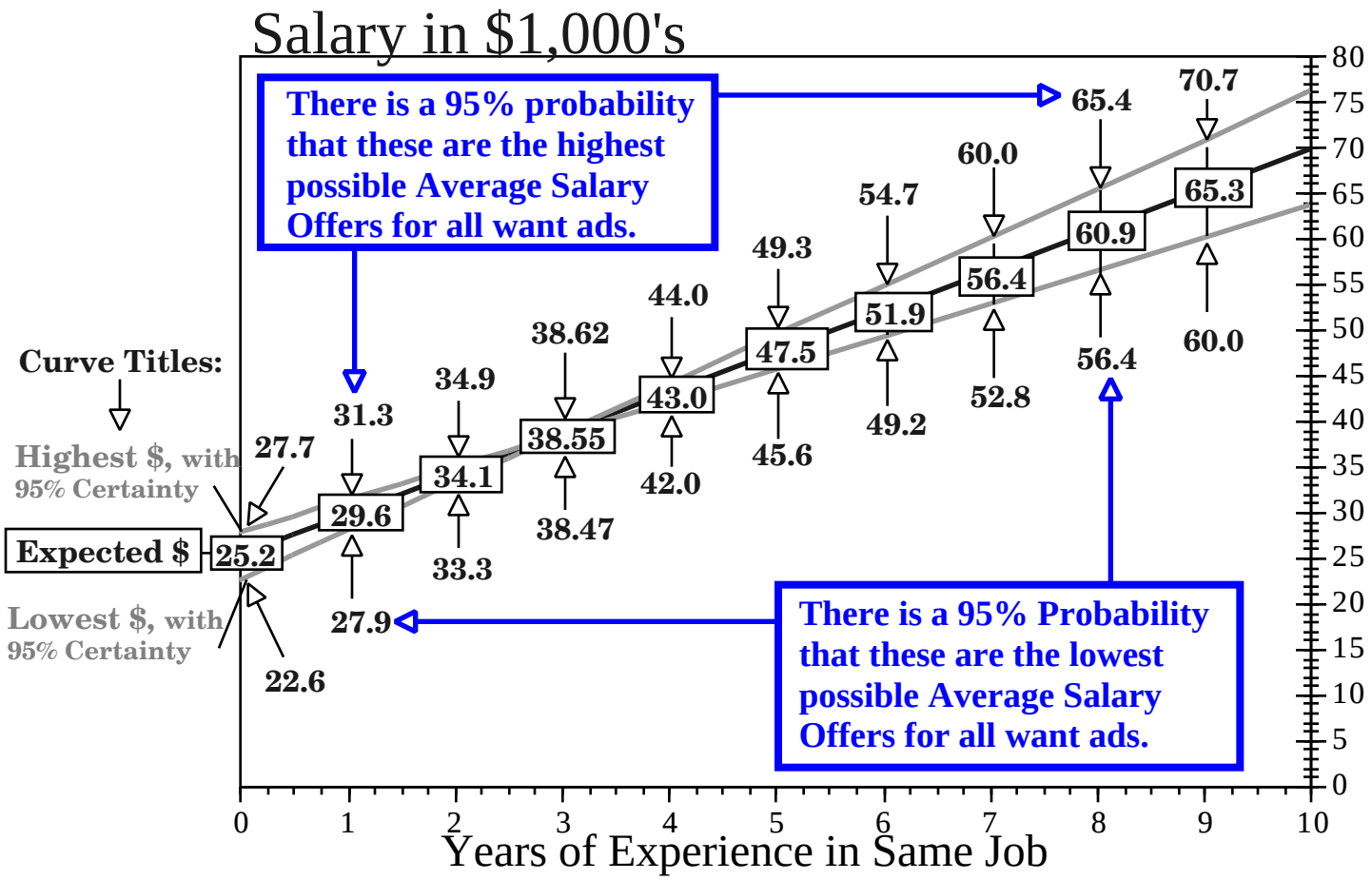

**Competitive Position™ Market Report**

Graph Explanation: Average Salary Offer per Required Experience.




**Competitive Position™ Market Report**

Graph Explanation: Average Salary Offer per Required Experience.

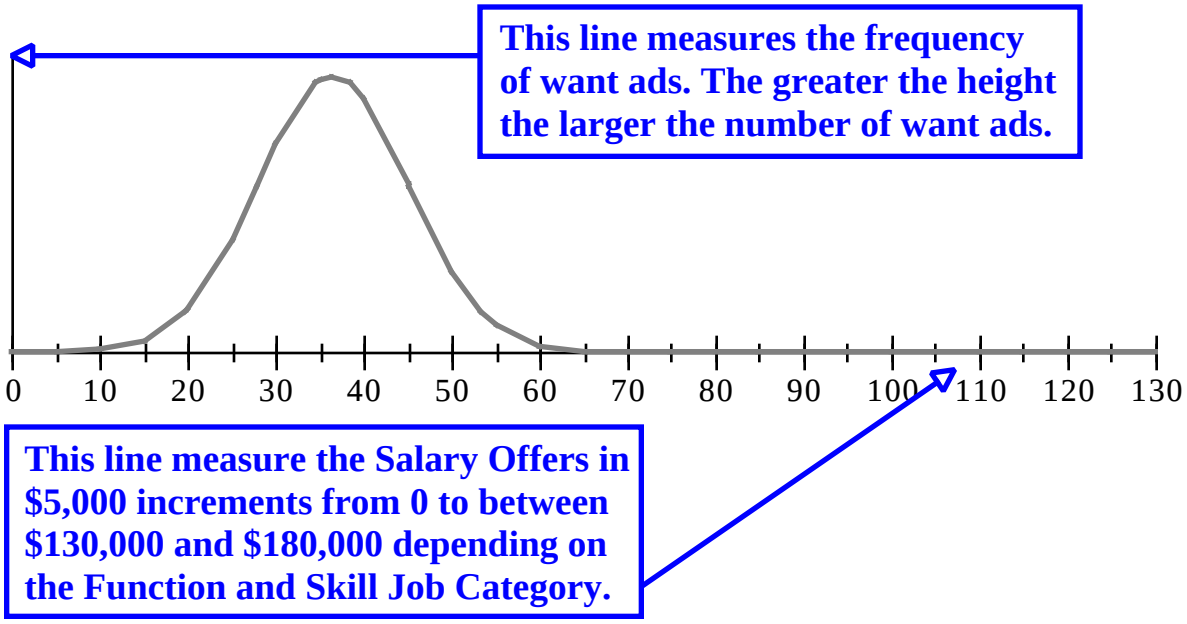



**Competitive Position™ Market Report**

Graph Explanation: Average Salary Offer per Required Experience.

# Help Desk Salary Offer Distribution

**Key: Salary in $1,000's; μ = Mean; std. = Standard Deviation.**

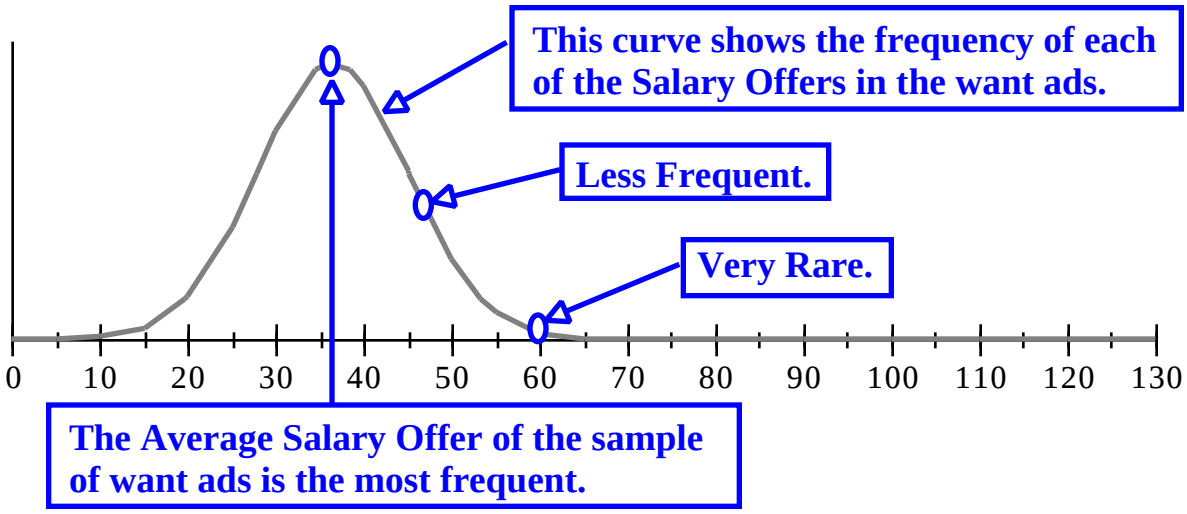



## Competitive Position™ Market Report

Graph Explanation: Salary Offer Distribution.

# Help Desk Salary Offer Distribution

**Key: Salary in $1,000's; μ = Mean; std. = Standard Deviation.**

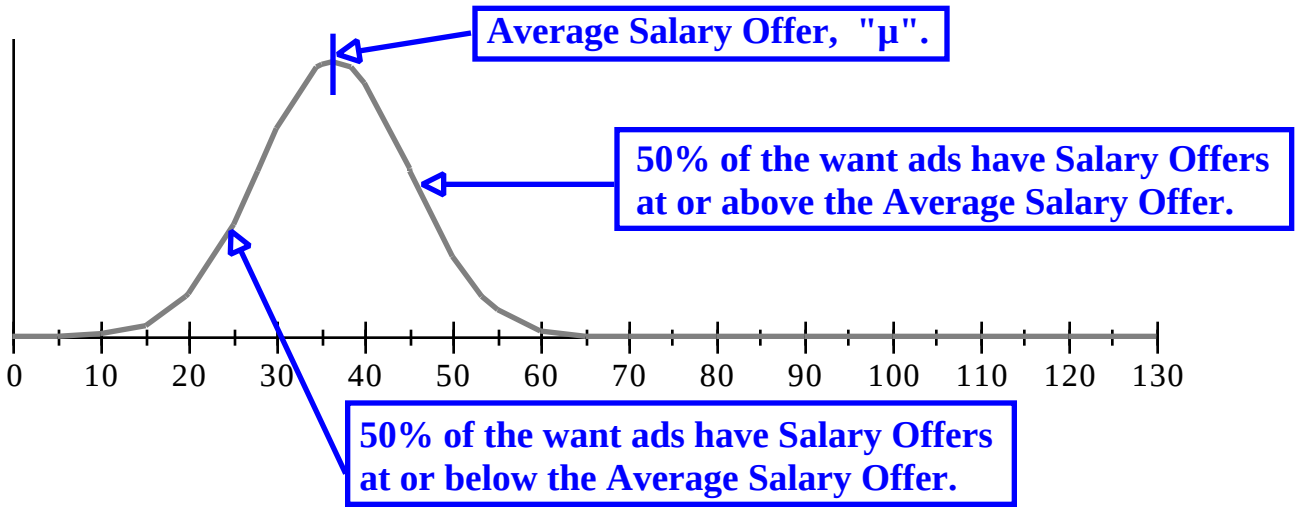



## Competitive Position™ Market Report

Graph Explanation: Salary Offer Distribution.

# Help Desk Salary Offer Distribution

**Key: Salary in $1,000's; μ = Mean; std. = Standard Deviation.**



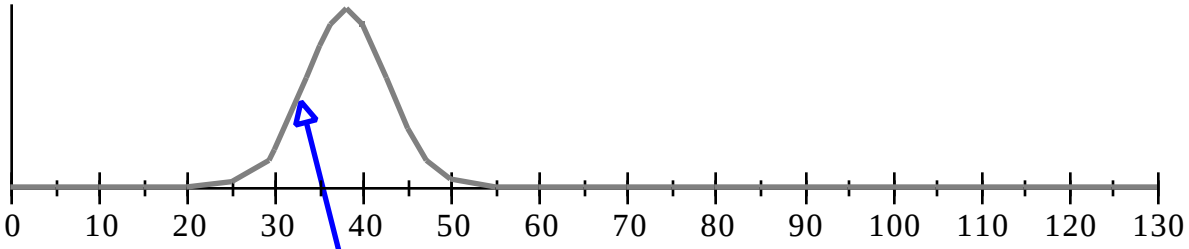

## Competitive Position™ Market Report

Graph Explanation: Salary Offer Distribution.

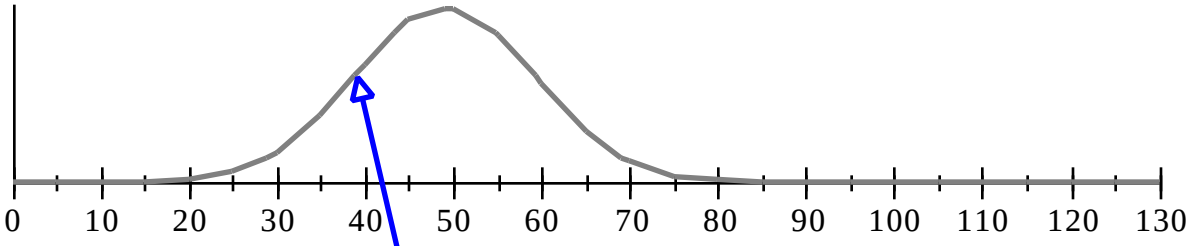
# Help Desk Salary Offer Distribution

**Key: Salary in $1,000's; μ = Mean; std. = Standard Deviation.**

**The steepness and spread of the frequency curve, or "hill", indicates the degree of variability in Salary Offers across want ads.**



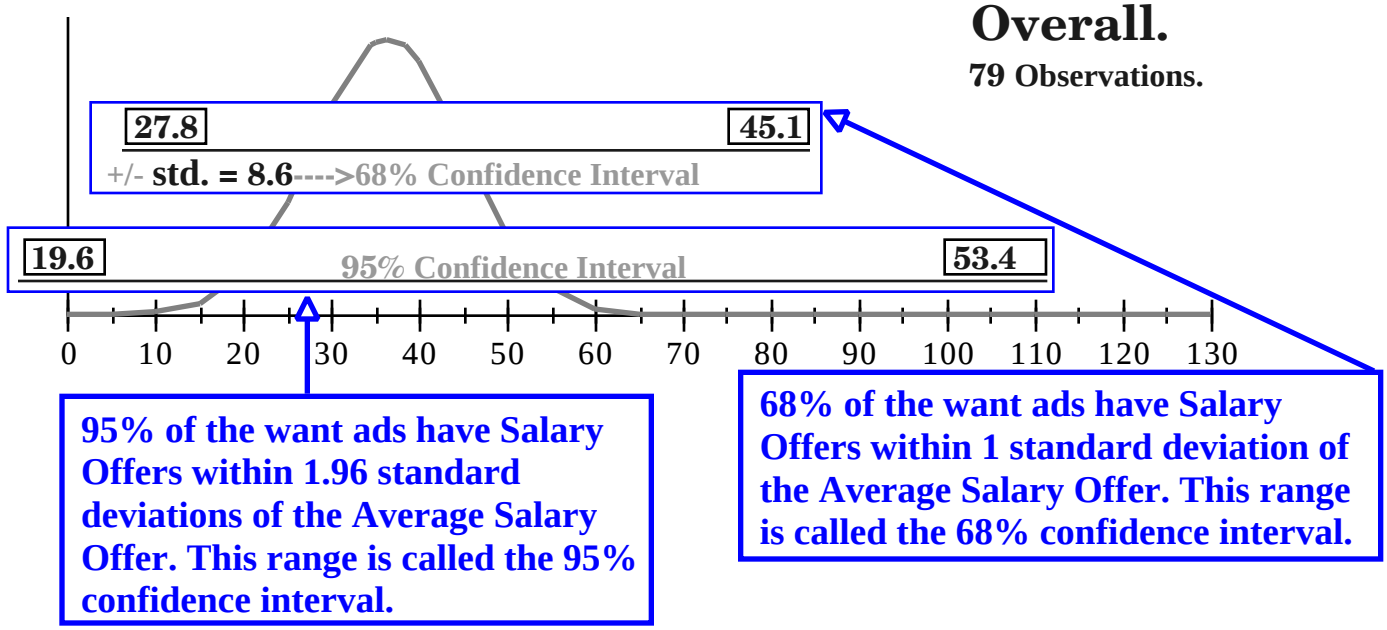

**This steep and tight curve shows that most Salary Offers are not very different from the Average Salary Offer.**




**This more gradual and loose curve shows that many Salary Offers are different from the Average Salary Offer.**

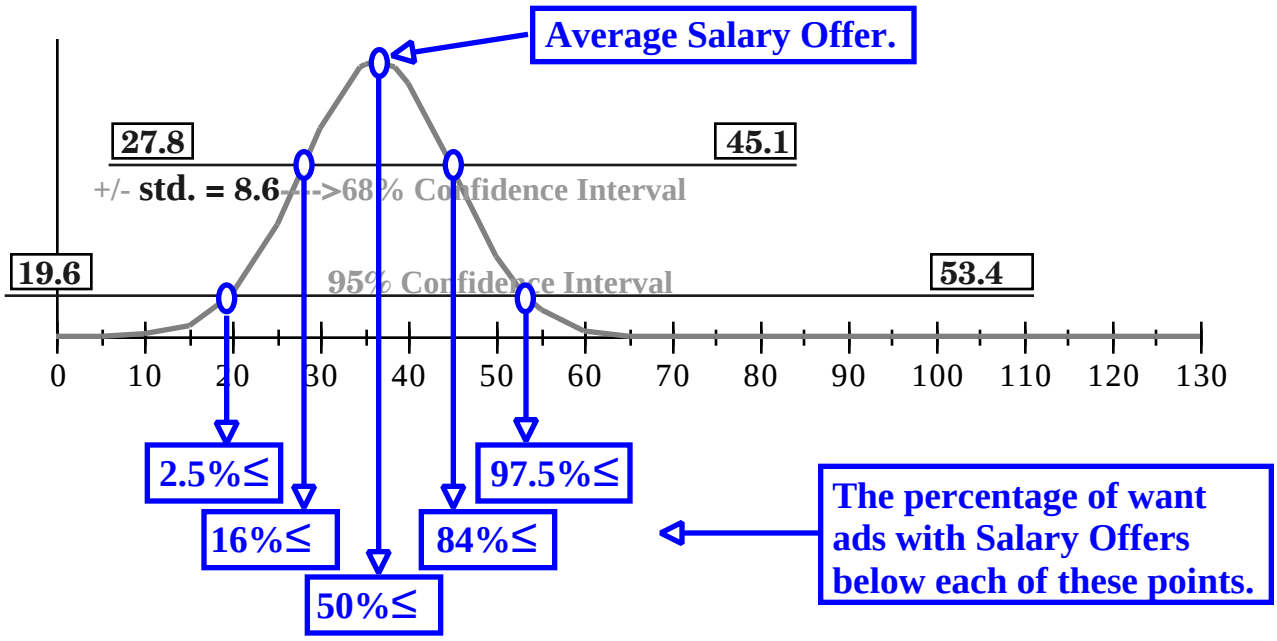
# Help Desk Salary Offer Distribution

**Key: Salary in $1,000's; μ = Mean; std. = Standard Deviation.**



# Help Desk Salary Offer Distribution

**Key: Salary in $1,000's; μ = Mean; std. = Standard Deviation.**

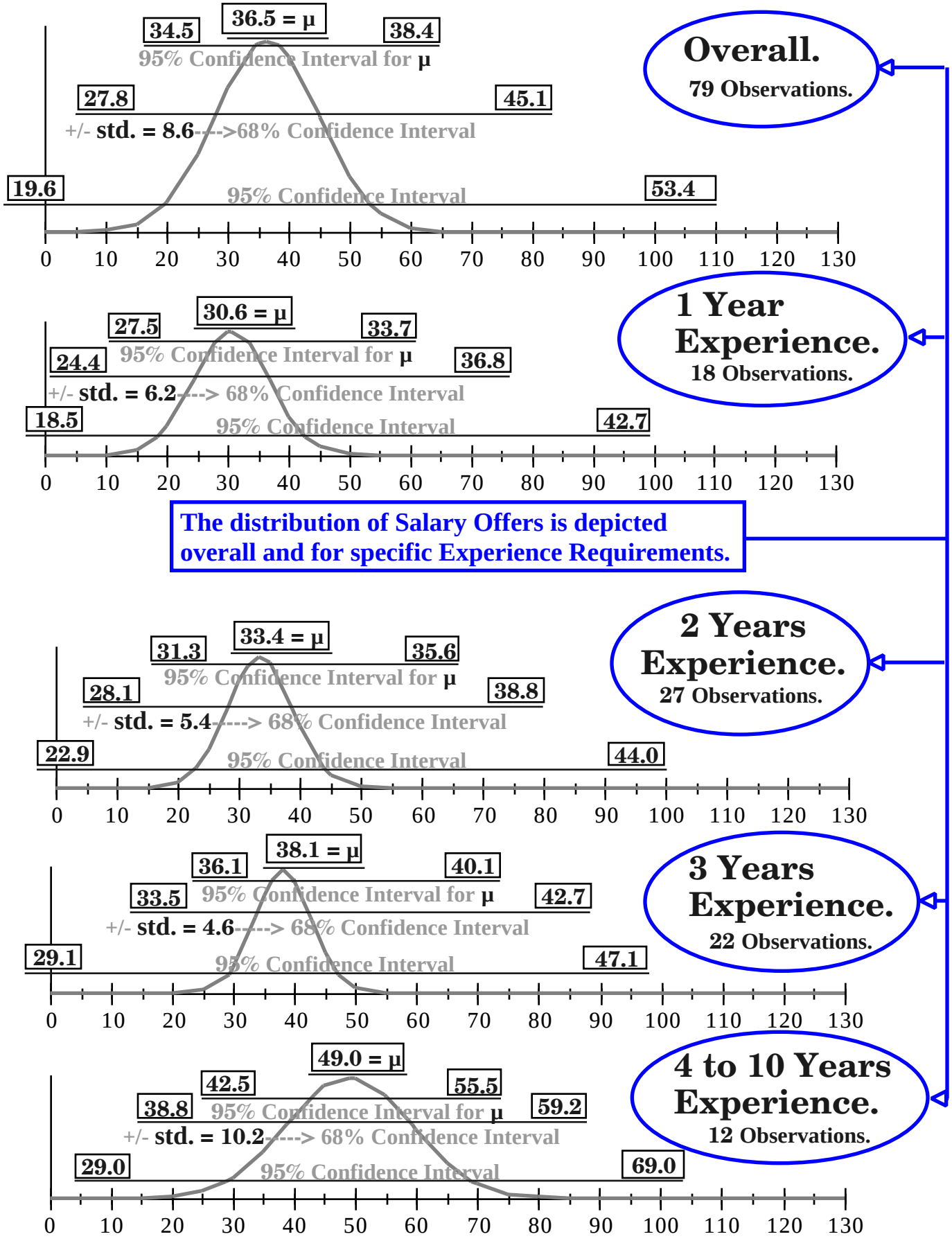



## Competitive Position™ Market Report

Graph Explanation: Salary Offer Distribution.

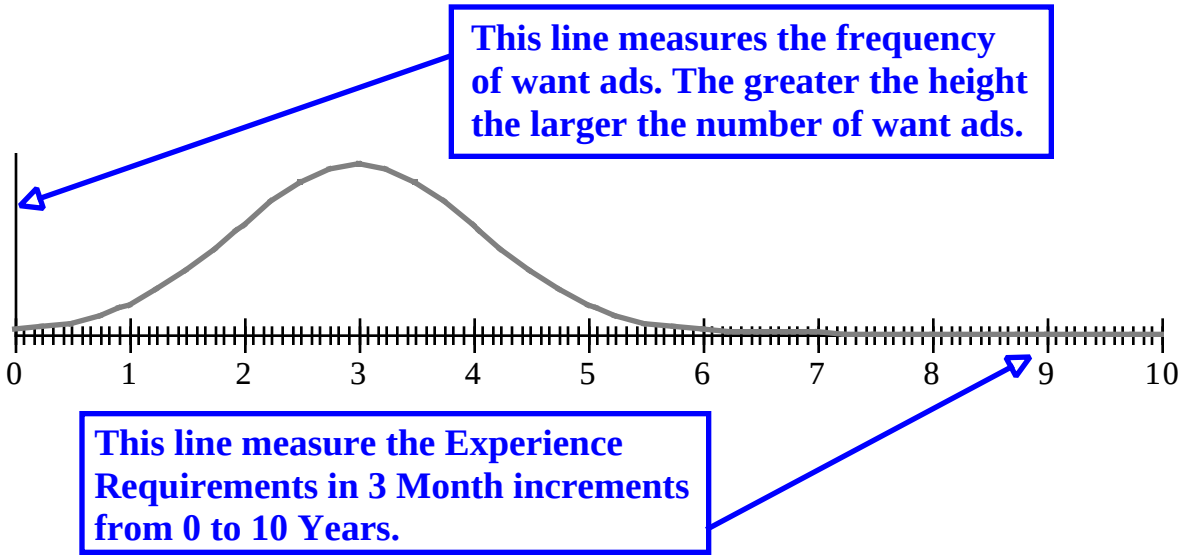
# Help Desk Salary Offer Distribution

**Key: Salary in $1,000's; μ = Mean; std. = Standard Deviation.**



# Help Desk Experience Requirement Distribution

**Key: Experience in Years, Months; μ = Mean; std. = Standard Deviation.**

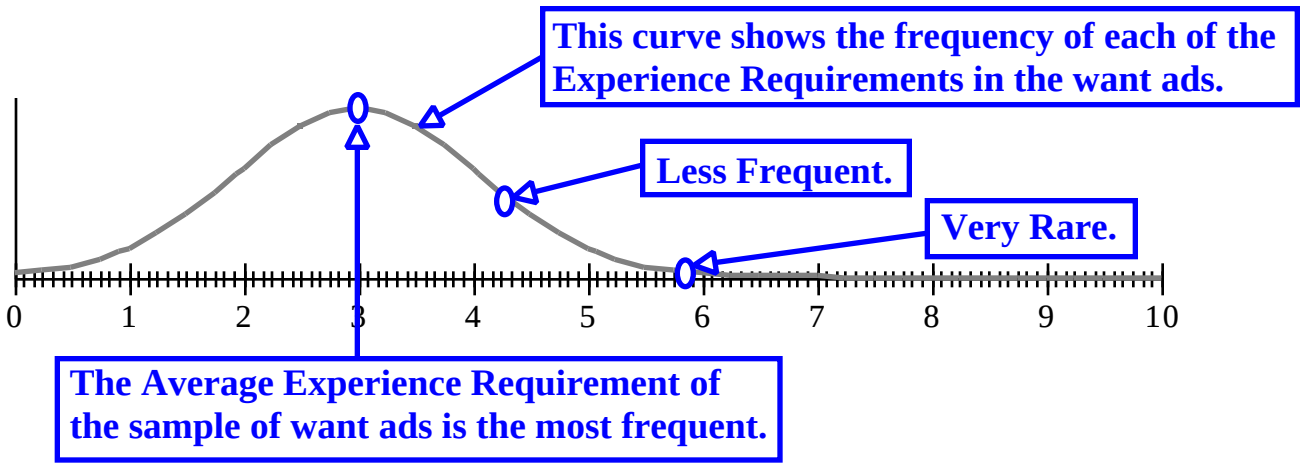



## Competitive Position™ Market Report

Graph Explanation: Experience Requirement Distribution.

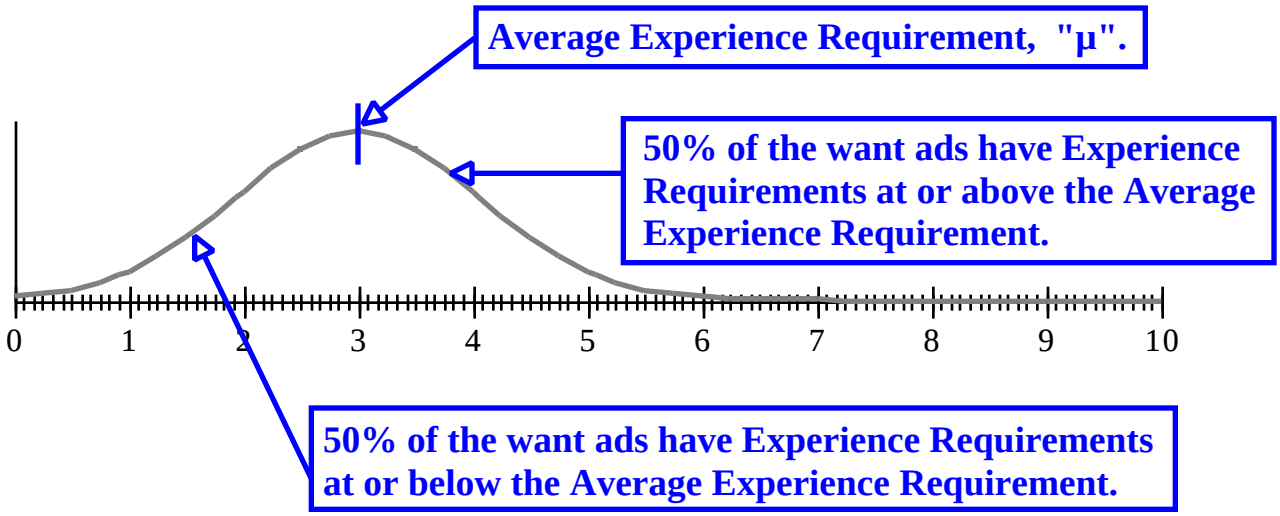
# Help Desk Experience Requirement Distribution

**Key: Experience in Years, Months; μ = Mean; std. = Standard Deviation.**



# Help Desk Experience Requirement Distribution

**Key: Experience in Years, Months; μ = Mean; std. = Standard Deviation.**



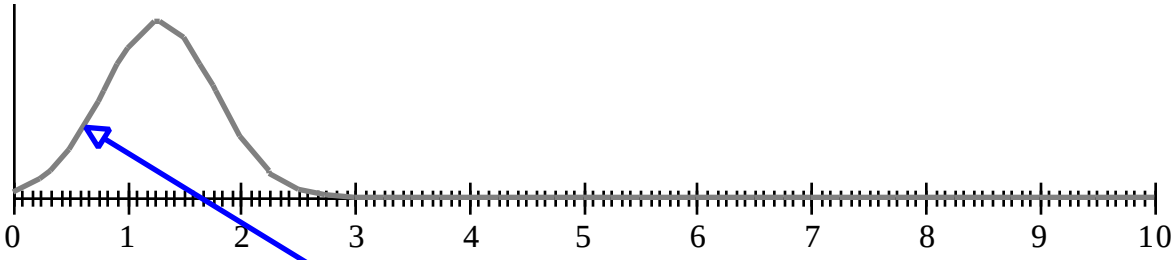

## Competitive Position™ Market Report

Graph Explanation: Experience Requirement Distribution.

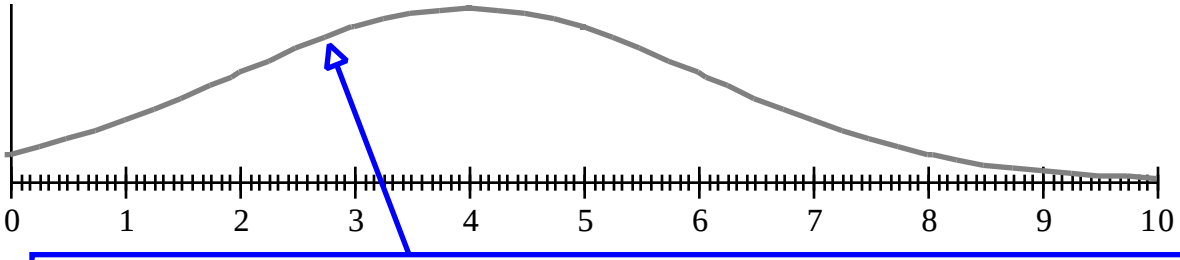
# Help Desk Experience Requirement Distribution

**Key: Experience in Years, Months; μ = Mean; std. = Standard Deviation.**

**The steepness and spread of the frequency curve, or "hill", indicates the degree of variability in Experience Requirements across want ads.**




**This steep and tight curve shows that most Experience Requirements are not very different from the Average Experience Requirement.**

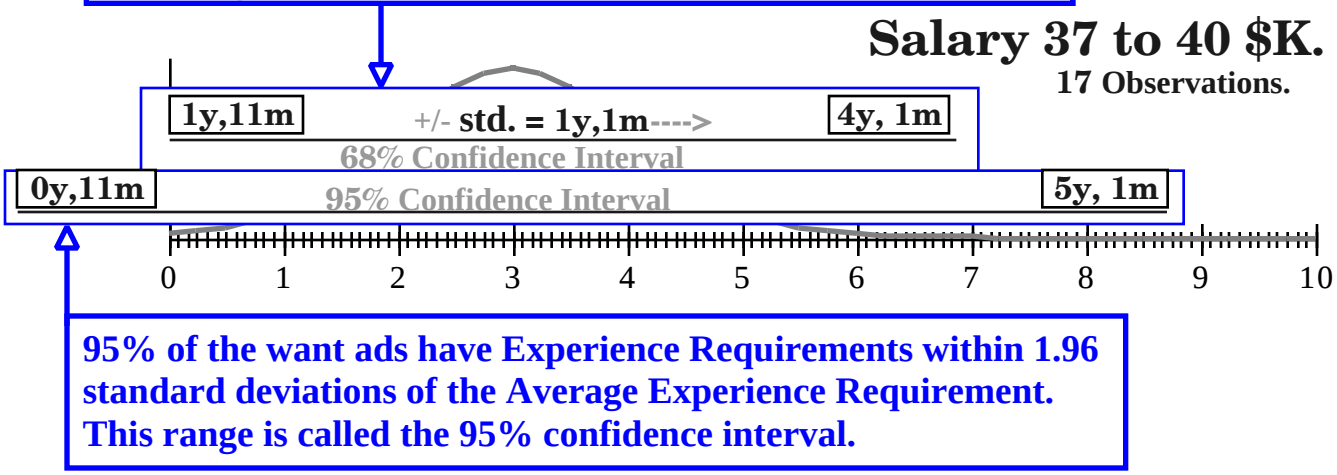



**This more gradual and loose curve shows that many Experience Requirements are different from the Average Experience Requirement.**

# Help Desk Experience Requirement Distribution

**Key: Experience in Years, Months; μ = Mean; std. = Standard Deviation.**

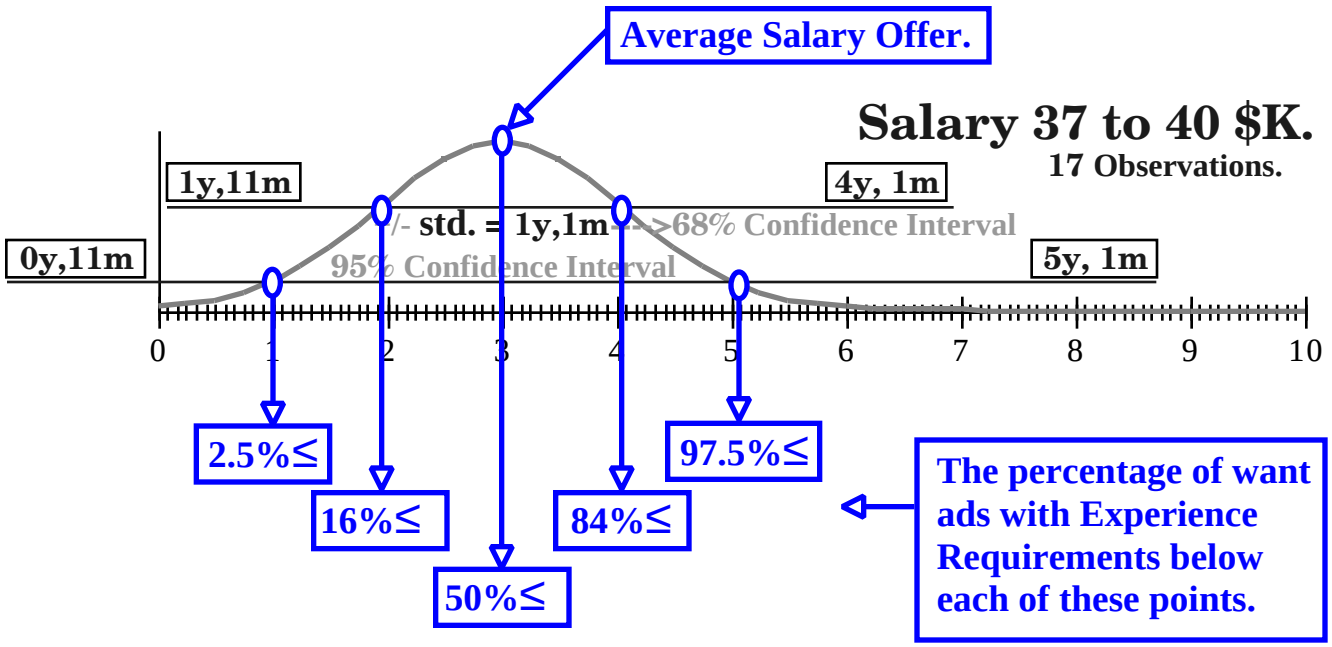
**68% of the want ads have Experience Requirements within 1 standard deviation of the Average Experience Requirement. This range is called the 68% confidence interval.**




**95% of the want ads have Experience Requirements within 1.96 standard deviations of the Average Experience Requirement. This range is called the 95% confidence interval.**

# Help Desk Experience Requirement Distribution

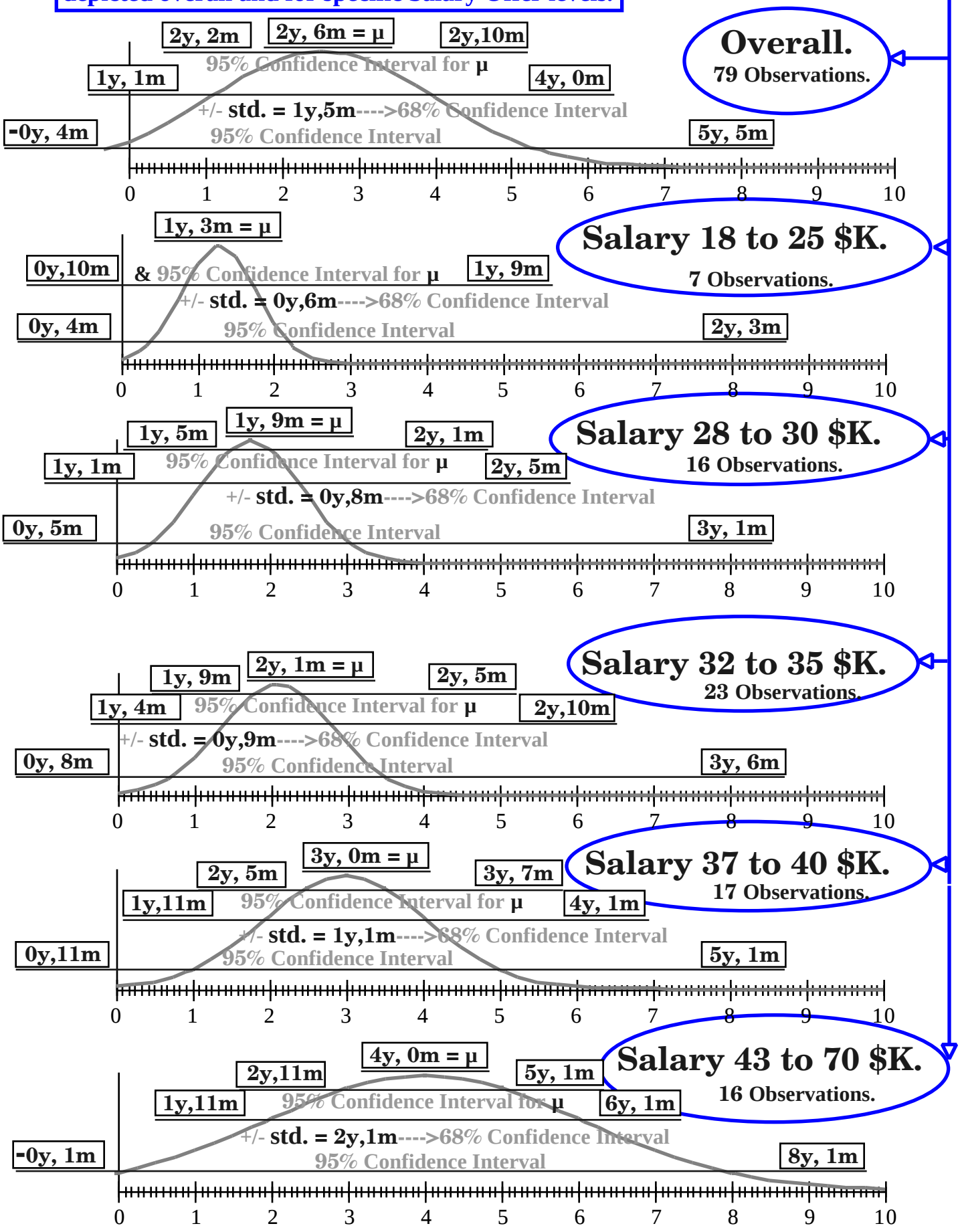
**Key: Experience in Years, Months; μ = Mean; std. = Standard Deviation.**




## Competitive Position™ Market Report

Graph Explanation: Experience Requirement Distribution.

**The distribution of Experience Requirements is depicted overall and for specific Salary Offer levels.**



# Competitive Position™ Market Report
# Mail Order Form

**Your:**

**eMail address** _____

**Name** _____

**Address 1** _____

**Address 2** _____

**Town** _____ **State** _____

**Zip Code** _____

**Your order will be sent as a "pdf" file attachment to your eMail address above. An additional fee is charged to receive an order through the mail.**

**Make Check Pay to the Order of: Whole Root Economic Research, Inc.**

## Mail to:

**Competitive Position™ Market Report**
**Whole Root Economic Research, Inc.**
**P.O. Box 603**
**South Glastonbury, CT 06073-0603**

| Individual Competitive Position™ Market Reports. | # | $ |
|---|---|---|
| 1. C Programmer Market Report @ $15.00 each | | |
| 2. PC Application Programmer Market Report @ $15.00 each | | |
| 3. Quality Assurance Market Report @ $15.00 each | | |
| 4. Data Base Administrator Market Report @ $15.00 each | | |
| 5. Data Base Programmer Market Report @ $15.00 each | | |
| 6. Data Base Support Market Report @ $15.00 each | | |
| 7. LAN Administrator Market Report @ $15.00 each | | |
| 8. LAN Support Market Report @ $15.00 each | | |
| 9. Main Frame Application Programmer Market Report @ $15.00 each | | |
| 10. Main Frame Quality Assurance Market Report @ $15.00 each | | |
| 11. Main Frame Production Control Market Report @ $15.00 each | | |
| **Group Competitive Position™ Market Reports.** | | |
| 12. Programmer Group Market Report @$40.00 | | |
| 13. Data Base Group Market Report @$35.00 | | |
| 14. LAN Group Market Report @$25.00 | | |
| 15. Main Frame Group Market Report @$40.00 | | |
| 16. Quality Assurance Group Market Report @$35.00 | | |
| 17. Support Group Market Report @$25.00 | | |
| 18. All 12 Market Reports @$100.00 | | |
| **Average Salary Offer Group 3D Graphs** | | |
| 19. Programmer Group Average Salary Offer 3D Graph @$5.00 | | |
| 20. Data Base Group Average Salary Offer 3D Graph @$5.00 | | |
| 21. LAN Group Average Salary Offer 3D Graph @$5.00 | | |
| 22. Main Frame Group Average Salary Offer 3D Graph @$5.00 | | |
| 23. Quality Assurance Group Average Salary Offer 3D Graph @$5.00 | | |
| 24. Support Group Average Salary Offer 3D Graph @$5.00 | | |
| Mail Delivery in U.S.A. and Canada only @$15.00 *Sent Free to Email* | | |
| Connecticut, U.S.A. residents add 6% sales tax to total | | |
| **TOTAL** | | |