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**Title:** *Evolution of Job Analysis*

The accompanying research report is submitted to the University of Wisconsin-Stout, Graduate School in partial completion of the requirements for the

**Graduate Degree/ Major:** MS Applied Psychology

**Research Advisor:** Susan Staggs, Ph.D.

**Submission Term/Year:** Summer, 2013

**Number of Pages:** 68

**Style Manual Used:** American Psychological Association, 6<sup>th</sup> edition

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**Crager, Steven, S. *Evolution of Job Analysis***

**Abstract**

A field project was conducted to perform a job analysis for a small Midwestern business with unique attributes and circumstances. Due to the evolving nature of the workforce and this particular organization's need for an adapted approach to job analysis, three methods were combined to use a more strategic approach to job analysis. Critical incident, task analysis, and position analysis were performed together to fulfill the needs of the organization for their current and future positions. Eighteen job descriptions were developed using this method for every current and some foreseeable future job titles.

It was hypothesized that any of these traditional job analysis methods alone would have proven insufficient and that together these methods would fulfill the needs of the organization in a cost-effective manner. The results produced 18 satisfactory job descriptions created by the researcher and a team of subject matter experts from the organization. There are a total of 67 pages in this research paper.

### **Acknowledgements**

I would like to acknowledge my practicum professor, Dr. Staggs, for enabling me to gain an interest in job analysis and to have the opportunity and guidance to be able to perform a number of them that eventually led to the topic of this field problem. I would also like to acknowledge my former thesis and field project advisors, Dr. Suejung Han, and Dr. Kori Callison for all the help and guidance they gave me.

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## **Chapter I: Introduction**

There were a number of circumstances that made this project unique and therefore valuable to practitioners who utilize job analysis. First, the target organization was a small, recently founded business (2009) with a lack of human resource expertise. Second, teleconferencing which is communication from a distance was an integral part of the process. Usually teleconferencing is done over the phone or Skype and highlighted the trend of communication flexibility needed by organizations, both large and small (Kelley, 2011). Communication in general allows for an organization, regardless of its size, to make better more informed decisions. This can have a number of consequences both good and bad depending on the level and flexibility of communication in the organization (Kelley, 2011). Third, due to new technology, the tasks, duties, responsibilities, knowledge, skills, and abilities necessary for current and future jobs at this organization were examined with extensive input from subject matter experts (SMEs).

Due to these concerns, several methods of job analysis were utilized to meet the needs of the client. A general task analysis was completed to lay a foundation for further analysis. This foundation was modified into a question format and administered to a focus group of subject matter experts from the company. The task analysis was a very large selection of previously established and commonly accepted points from the ONET database for each job description. The task analysis was then filtered administering the points as items in a questionnaire to Subject Matter Experts (SME). SME feedback was used to filter the task analysis and create a more relevant and specific job description. Finally using a critical incident technique the SMEs were asked to specify any gaps or missing qualifications or specifications for the listed job titles that were essential to that job.

## **Chapter II: Literature Review**

### **Purpose of Job Analysis**

According to Sanchez and Levine (2000), the purpose of a job analysis is to “gather, analyze, and structure information about a job’s components, characteristics, and job requirements” (p.809). Job analysis plays a vital role in determining several factors in an organization, including selection, training, job classification, compensation, development, promotions, evaluations, and downsizing (Sanchez & Levine, 2000). There are two integral components of job analysis: job characteristics and job specifications. Job characteristics are comprised of tasks, duties, and responsibilities (TDRs), whereas knowledge, skills, and abilities (KSAs) are the components of job specifications. Tasks, duties, and responsibilities are the behaviors performed within the job that are essential for the job holder to effectively do their job (Embrey, 2000). Embrey (2000) further describes job requirements in general as observable behaviors or underlying mental processes that provide a structure. Knowledge, skills, and abilities are the competencies necessary to be able to effectively perform the tasks, duties, and responsibilities of the job (DeSimone & Werner, 2012).

TDRs play a very important role when creating job descriptions, administering performance appraisals, and differentiating between jobs (Arvey, Salas, & Gialluca, 1992). TDRs are important to the creation of job descriptions because a job description cannot be created without listing the TDRs necessary to perform the job. Performance appraisals are often based off of the listed TDRs in a job description. At the basest level the TDRs of any given job are what distinguish them from another job (Arvey, Salas, & Gialluca, 1992). KSAs have also been described as attributes that can be used in determining job person or organization person fit (Arvey, Salas, & Gialluca, 1992). These attributes are often used as the selection instruments, in

training programs, or other interventions to improve the performance of an employee (Sanchez & Levine2000). TDRs specify what it is that the job does for the organization and KSAs specify what an individual needs to be able to know and do in order to be able effectively perform those TDRs. A simpler way of defining what a job analysis is would be to define it is as a process that determines what an organization needs to be done and what qualifications a person would need to effectively fill the organizations need. These two concepts, TDRs and KSAs, work together to form a job description that allows an organization to fill a job with an individual that knows what their TDRs are and knows whether that individual is qualified for the job by examining their KSAs.

Job analysis should also be the foundation for many decision making processes used by the organization. For example an organization cannot make a truly effective decision on a recruitment and selection program without having performed at least a basic job analysis. Neither can an organization make an effective decision when it comes to promotions, raises, compensation plans, benefits programs, training programs and a number of other essential programs and policies that the organization needs to survive and grow. According to Clifford (1994) an effective growth program for an organization cannot be formed without performing a job analysis. There are several reasons why this is true including that an organization will not know where it needs to grow and how much it can effectively grow without these procedures. If the organization does not know how much each new employee will be compensated, what their qualifications need to be, and what they will be doing, then the organization cannot make effective decisions on any subject dealing with these topics (Clifford, 1994).

According to Morgeson and Campion (2000), job analyses are conducted primarily to aid an organization in determining tasks, duties, and responsibilities for a given job position. It is



also used to determine the qualifications, or to provide a standard of knowledge, skills, and abilities that the position would need or is preferred to have, in order to perform that position at a satisfactory level (Morgeson & Campion, 2000). There are also many other reasons to perform job analyses, some of those reasons include avoiding or preventing possible legal issues.

According to the Uniform Guidelines on Employee Selection Procedures (1978) legal issues for job analyses and requirements are a major concern.

### **Legal Issues**

Due to the supposed need for regulations the federal government attempted to set uniform rules and guidelines to establish benchmarks for tests and selection procedures. Several government agencies have adopted what is called the Uniform Guidelines on Employee Selection Procedures handbook and refer to it with regularity (Section 60-3, U.G.E.S.P. (1978)). Courts continue to have a role in selection cases and often defer to the Uniform Guidelines on Employee Selection Procedures (Guidelines) handbook (Clifford, 1994). Job analyses have been scrutinized by the law for many reasons (Clifford, 1994). As mentioned there are many stipulations, restrictions, and guidelines by which companies have to abide by in order to be compliant with current legal standards. In an organization that has either not performed any job analyses or has performed poor quality job analyses, or performed out of date methods of job analysis, disorder and discontentment from the position is a likely consequence (Carlson & Mellor, 2004). Job analyses can prevent many of these negative consequences and can even have positive consequences, such as higher job satisfaction. Having a higher job satisfaction will most likely result in lower turnover rates and higher productivity from employees (Carlson & Mellor, 2004). It is far less likely to be on the receiving end of litigation from an employee that leaves the company with a high job satisfaction. Job analyses may seem like a tedious and

pointless task to many business owners and managers, however to a trained organizational development or human resources professional, they are not only important to prevent legal claims but aid the organization in becoming more effective (Clifford, 1994).

Griggs v. Duke Power Company (1971) is one of the first cases that used the concept of job analysis to decide a legal case. In this particular case, Duke Power had policies that were discriminating against African-Americans and possibly other minorities. The minorities were allowed to work only in the labor department, which was a policy that was discarded after Civil Rights Act was implemented (Griggs, 1971). However other policies that continued to discriminate against minorities continued. The company required employees to take IQ tests and have high school diplomas (Griggs, 1971). Later the case showed that White individuals were able to perform the same jobs without having either of those requirements (Griggs, 1971). The findings of the case were that aptitude tests used in hiring practices that adversely impacted minorities could not be used unless they were reasonably related to the job (Griggs, 1971). As can be seen from this court case, not performing a proper job analysis can lead to either intentional or unintentional discrimination of employees. It is a requirement by law that specifications of job titles be job related and the only way to establish that information is to perform a quality job analysis. The results of this court case would show that the selection procedure was not a valid measure (Section 60-3, U.G.E.S.P. (1978)).

According to the Guidelines (1978) having certain types of validation available for the selection procedures in question is a must. Knowing what these types of validation are and having them readily available can aid an organization in defending themselves legally if the need arises. There are three types of validation that are used in the Guidelines, they are content, criterion-related, and construct validity. If an employer or an organization is to demonstrate that

it uses a valid method for its selection process, then these three criteria are a good place to start. According to the Guidelines (1978) criterion-related validity should consist of empirical data that shows the chosen selection procedure is related or correlated with the important aspects of job performance. Content validity needs data that shows that the content of the selection procedure accurately represents key parts of job performance (Section 60-3, U.G.E.S.P. (1978)). Lastly construct validity needs to show data that confirms that the measures that have been chosen to identify performance in the chosen job are accurately represented (Section 60-3, U.G.E.S.P. (1978)). These three areas of validity seem very similar, but each has distinct differences that make them uniquely important when performing a job analysis.

### **Validation of Selection Methods**

The use of selection methods is essential to the usefulness of an accurate and legally defensible job description (Section 60-3, U.G.E.S.P. (1978)). These selection methods must be integrated with the job description to both help the organization to fill the KSAs of the position and allow the organization to defend itself for its decision making process (Section 60-3, U.G.E.S.P. (1978)). A selection method that is not able to measure the particular requirements of the position would be an example of an inappropriate method of selection and therefore denotes the need for validation of those selection methods. As mentioned previously the Guidelines (1978) denote three main types of validity, they are criterion-related validity, content validity, and construct validity.

### **Criterion-Related Validity**

Criterion-related validity is the measure of how well a particular variable predicts an outcome or is statistically related to a desired outcome. A personality test administered by a psychologist that is meant to predict performance in some field would be a good example of

criterion-related validity. More real world examples of criterion-related validity that are well known are the ACT, SAT, GRE, and other college and graduate school entrance exams (Burns, 1996). These exams are meant to predict future performance in a given area. In regards to job analysis criterion-related validity measures can be useful for certification requirements as criterion-related validity has been shown to be generalizable across situations (Burns, 1996). In other words achieving a specific certification can be shown to be statistically related to the desired outcome. Aptitude tests for employees would be a good example of how criterion-related validity could be used as a requirement for a particular position. The aptitude test would be a predictor of future performance on the job. In the case of a job analysis any criterion-related measurements must be shown to empirically valid in order to be used. The criterion must be shown to effectively predict the desired outcome of the job title or be statistically related to the desired outcome (Kane, 1990).

The two main approaches to using criterion related validity are concurrent and predictive validation (Barrick, Field & Gatewood, 2011). Concurrent validation often obtains predictors and criteria from current employees in the related setting. After the predictors and criteria have been obtained they are statistically measured for correlation and if a statistically significant relationship between the predictor and job success or the particular criteria, it can then be used as a measure of KSAs in a job description (Barrick, Field & Gatewood, 2011). Predictive validation is very similar to concurrent except that the target audience is different. In concurrent validation the targets were the current employees and the objective was to determine whether current employees and the selected predictor were correlated with job success or the criteria. Predictive validation is typically administered to the job applicants and then after a period of

time the predictor and job success of the applicants are measured to determine if there is a correlation with job success or other criteria (Barrick, Field & Gatewood, 2011).

### **Content Validity**

Content validity as a result of job analysis should reflect as closely as possible actual job behavior. Content validity as a method of predicting performance within a particular position would be something similar to what is being performed on the job. For example in a production position giving the applicant a chance to work on the production line before starting their job to observe them would be an example of content validity. Content validity as a selection procedure for the job position would be sufficiently defensible if it was able to show that it resembled significant parts of the job (Burns, 1996). Content validity is different from criterion-validity in a very particular way. Content validity uses a job sample to measure current competency of the employee that can then predict performance on the job. Criterion-validity would use a different measure such as a personality test or the ACT to predict future performance (Burns, 1996).

According to Barrick, Field, and Gatewood (2011), a typical environment where content validity would be appropriately used would be where there is a smaller number of applicants, such as a small business. Another instance where content based predictors would be used for selection would be when other measures of job success criteria are not established or not available. Lastly content validity is also important to use as a type of face validity or to help the applicants “feel” like the measure that is being used for the job description is relevant to the job they are applying for, however face validity and content validity are separate and must not be confused (Barrick, Field & Gatewood, 2011). Content validity would be inappropriate not valid in situations where the KSAs being measure are more abstract. Content validity relies on expert judgment to determine whether the KSAs is being sufficiently met and therefore more abstract

KSAs such as “problem solving” would be unsuitable for a content related validation method of selection (Barrick, Field & Gatewood, 2011).

### **Construct Validity**

Construct validity, as a result of job analysis, would some type of test or scale that would measure an applicant’s ability in a given theoretical construct that is relevant to the job. The example previously mentioned with the production worker, in the case of construct validity, would be to test them on the construct of production and what they know about production. The difference between construct validity and content validity in this case would be to test what they know about the construct not necessarily if they can perform the construct as an action. Another key difference would be that construct validity would be a more useful measure of constructs such as intelligence, personality traits, leadership abilities, and other traits. Content validity would not be appropriate for this type of measurement, nor would criterion-related validity (Burns, 1996).

In order to effectively establish construct validity for a selection method a number of steps must be taken in order to validate the hypothesis of a construct. First the construct must be defined in a specific manner and a hypothesis must be formed that relates to the correlation of the construct and other relevant variables (Barrick, Field & Gatewood, 2011). Second a measure must be developed that can accurately assess the construct, and third studies must be performed using the hypothesis, construct and measure to establish any relationships (Barrick, Field & Gatewood, 2011). However there are times when no established measure exists that allows us to know the validity of the construct. When this is the situation there are a number of signs that can be used to aid in the validation of the construct and in the development of a measure for the construct. First any intercorrelations among the constructs parts would allow the researchers to

observe groupings or clusters of the parts of the construct (Barrick, Field & Gatewood, 2011). Second, the individual parts that belong to the same cluster can be measured and should be internally consistent or reliable. Third, different measures that assess the same construct as the measure that is in development should be related. Measures that assess different construct or measures that should measure different construct should prove to be unrelated. Lastly content validity studies should show that experts have judged the construct to be related to the sampled job content and is relevant to the KSAs in the job description (Barrick, Field & Gatewood, 2011).

### **Importance of Accuracy**

The consequences of not performing job analyses or performing poor or outdated analyses leads to the next topic, the importance of accuracy of job analyses. Inaccurate job analysis can greatly impede the purpose of the job analysis which is to improve the performance of the employee and to provide a standard with which to be measured (Sanchez & Levine, 2000). Inaccuracy in job analysis can compromise decision making processes and reduce the effectiveness of both the organization and the individual (Sanchez & Levine, 2000) by enabling poor decision making processes due to misunderstandings in job responsibilities between management and employee. Inaccurate job analyses can cause many problems in an organization beside simple disorder, such as an employee not understanding what their responsibilities are, what skills they need in order to fulfill those responsibilities, and a sense of ambiguousness and loss of purpose (Sanchez & Levine, 2000). Virtually every human resource activity is based on the assumption of accurate job descriptions and as has been previously mentioned legal concerns are also an issue (Sanchez & Levine, 2000).

There is however a problem when it comes to judging the accuracy of job analyses. As has been mentioned in several studies on the subject (Sanchez & Levine, 2011), identifying any type of “true” score for a job and what exactly are the best KSAs and what exactly are the best TDRs for a job are very difficult objectives to achieve. Sanchez and Levine (2011) state that creating a “true” score for a job description is an almost impossible task. This is due to the ever-changing nature of the workforce and the difference between organizations. A position in one organization may not have the same TDRs or KSAs as the same position in another organization. Therefore according to Sanchez and Levine (2011) creating generalizable job descriptions and performing general non-organization specific job analysis is a near futile task. A possible explanation for why it is so difficult to achieve these “true” or “exact” targets or descriptions of the required KSAs to effectively perform the TDRs of a given position is because of the ever changing and evolving nature of many positions (Sanchez & Levine, 2011). Especially because of increasing competition in the economy, shorter product life-cycles, and rapidly evolving technologies, organizations are changing at an ever increasing rate which can render many job analysis methods ineffective or inaccurate (Sanchez & Levine, 2011).

This rapid evolution in today’s workplace according to Singh (2008) is causing some past methods of job analysis to not be applicable and actually become an obstacle to the success of the organization. Examples of older methods used to perform job analysis can include the more subjective methods used in the past by many managers. According to McEntire, Dailey, Osburn, and Mumford (2006) these methods of managers subjectively performing job analyses are too time consuming and often inaccurate. Even more modern methods such as task analysis or critical incident methods when used alone or subjectively are often inaccurate (McEntire et al, 2006). McEntire et al (2006) continues that the reason these older methods are becoming



outdated is due the new technological nature of the workplace and how quickly job analyses must be updated after they are performed. New and innovative methods of job analysis must be explored (Singh, 2008).

### **Methods of Job Analysis**

There are many traditional methods of job analysis including task inventory analysis, position analysis, critical incident, and competency job analysis. Task inventory analysis is a type of analysis that is specific to an organization because managers and employees are involved (Bohlander & Snell, 2004). A list of tasks and their descriptions are compiled and identified and deemed essential to the job by the subject matter experts (SMEs). Position analysis is a method that is similar to the task analysis except that the tasks are pre-identified and then in questionnaire form administered to SMEs involved with the position in question to determine which of the tasks are appropriate for the position. Critical incident method uses a job analyst to identify a number of job tasks that are critical to performing the position successfully. The last type that will be discussed here is the competency method of job analysis. Competency based analysis is a constant development and compilation of worker tasks, duties, and responsibilities that are essential to the position to create the job description, set standards for recruitment, and to administer performance evaluations (Bohlander & Snell, 2004).

As has been discussed in previous sections new methods of job analysis need to be developed for a changing world of jobs and human resources. Job analysis has always been and most likely always will be a key instrument for human resources and the general organization of jobs in our workforce. Therefore new methods need to be developed besides those mentioned previously. Many other studies have proposed similar ideas such as a “strategic” approach to job analysis (Singh, 2008). One such strategic approach has been to combine some or all of the

traditional methods to allow for a more flexible objective and subjective analysis of any given position. The concern for inaccuracy in job analysis in many cases is due to the subjective nature of using SMEs in a job analysis (Singh, 2008; Palmon, Brown, Sandall, Buboltz, & Nimps, 2006). While this is not necessarily a negative aspect of using SMEs it is a matter of concern where accuracy is concerned. To alleviate this concern combining methods that use SME consultation with more objective methods such as critical incident methods backed with statistical analysis of the tasks provided. One such example of a statistically based task analysis database is O\*NET. O\*NET was originally developed by the Department of Labor specifically for the task of having a national benchmark and to develop a system that is both internally and externally valid (Palmon et al, 2006).

O\*NET was developed for a number of reasons including the purpose of having a system in place that would allow for the distribution of reliable and valid material to organizations across the world (Harvey & Wilson, 2010). As previously mentioned O\*NET was established to create a standard of acceptable job descriptions for use in almost any area of the world market. It was additionally developed to allow for a common terminology and language to be used across a large organization or multiple organizations (Harvey & Wilson, 2010). O\*NET was meant to be a cost effective method of developing job descriptions for organizations, however there are still many flaws with O\*NET. Harvey and Wilson (2010) factor analyzed four O\*NET surveys and found that there are many concerns with the discriminant validity of O\*NET's holistic rating scales. Each scale O\*NET uses is meant to measure a specific construct and according to Harvey and Wilson (2010) their findings suggest that O\*NET's constructs may be distinct conceptually but their raters are unable to empirically make distinct ratings of those

constructs. This potential weakness of O\*NET will not be an issue in this study as O\*NET is being supplemented by additional job analysis methods (Harvey & Wilson, 2010).

### **Task Inventory**

One of the main purposes of task analysis is to gather a set of tasks that are essential to optimally perform a given position (Embrey, 2000). This is done for many reasons including reducing the possibility of error occurring in the position or to encourage higher levels of performance and efficiency in the position. The topic of task inventory on its own is a broad category but Embrey (2000) breaks task analysis down into two specific approaches to task analysis. The first is the action oriented approach to task analysis which refers to observable behaviors that make up the structure of the task. The second approach is the cognitive approach which refers to mental processes that are the drive behind many of the observable behaviors. A few examples of these cognitive processes could be decision making or problem solving (Embrey, 2000).

There is also a breakdown of each of these approaches to task analysis. First a type of action oriented approach is the hierarchical task analysis which is a method of task analysis that involves breaking down the necessary tasks from top to bottom for meeting the overall objective of the given position (Embrey, 2000). The process starts with identifying the overall goal of the position and its tasks. Then the subsequent sub-tasks are added to the hierarchy according to achieving the overall goal of the position. A second type of action oriented approach to task analysis is to a method called the operator action event tree. These trees are a breakdown of sequences of actions and decisions when the position holder is expected to perform any of the given tasks that make up their position (Embrey, 2000). This approach to task analysis is often used in situations such as safety procedures and what is expected to happen in a chain of events

in case of an emergency (Embrey, 2000). A third type of action analysis approach o task analysis is a method of decision and action flow diagrams. This method is similar to the operator action event tree except that the decision and action flow diagram is typically used for more complex conditions and converts them into simpler diagrams. These diagrams also typically have only one level of task description, otherwise they tend to become too large and they themselves become too complicated (Embrey, 2000).

As for the cognitive approach to task analysis there is a breakdown of different techniques. The first is the critical action and decision evaluation technique (Embrey, 2000). This technique involves are series of decision making processes that precede any actions to a given task. Critical action and decision technique is also defined by the consequences that occur from either following or not following the critical actions and decisions delineated in the series of decisions. The second method in the cognitive approach to task analysis is the influence modeling and assessment system. This system is usually derived from a set of subject matter experts and consists of understanding the likely consequences, sequence of events and processes that are likely to occur in the case of an unusual or abnormal event in a given situation (Embrey, 2000).

### **Position Analysis**

Position analysis is a popular choice for performing a job analysis because this method is able to deliver a more quantitative set of data for the analyst. Position analysis methods achieve quantitative results by administering a scale that allows for numerical ratings of many of the important aspects in performing a job (Karasek, Kawakami, Brisson, Houtman, Bongers, & Amick, 1998). An example of such a scale is the Job Content Questionnaire (JCQ). The JCQ is a self-administered scale of social and psychological aspects of a position. The JCQ specifically

measures decision latitude, psychological demands, social support, physical demands, and job insecurity in self-report numerical scales (Karasek et al, 1998). This will allow for the analysis of work quality and other measurables such as pay of each employee, hours worked, and even the productivity in many cases of each position in a more quantitative fashion. The first two scales measure decision latitude as well as psychological demands which can then be translated into potential job related stress (Karasek et al, 1998). When decision latitude is low and psychological demands are high this will indicate a higher level of job strain. When there is high demand and also high latitude a type of good stress is the most likely result. The third scenario is low demand and low latitude which can result in low motivation and eventual loss of job related skills for that position holder (Karasek et al, 1998).

There are two subcategories of decision latitude which are skill discretion and decision authority. The skill discretion scales measures the amount of creativity that is required by the job and the amount of flexibility the job allows to the position holder. The second subscale is the measurement of decision authority of the worker or in other words the level of autonomy the position entails. The third scale is the measure of social support offered to the position. The measurement of social support in job analysis will allow for an understanding of what kind of pressures and influences a position will encounter. Social support includes influences or the lack thereof from co-workers, supervisors, upper management, subordinates, and any other social interaction that may occur in the work place (Karasek et al, 1998). The fourth scale measures physical demands of the position and what the effects of those physical demands are on both the body and the mind of the position holder (Karasek et al, 1998). The fifth scale is the measurement of job insecurity. This entails how sure a position holder will feel about the permanency of their job. It can also measure the amount of dedication to an organization a

position holder will most likely have due to the permanent or temporary nature of the position. These scales combined create an example of a method of performing a position analysis method of job analysis and its usefulness (Karasek et al, 1998).

### **Critical Incident**

The critical incident technique in summary is a qualitative approach to job analysis that involves gathering data on human behaviors and activities and noting their relevance to the performance of a given position or job (Hughes, Hilary, & Williamson, 2007). The creator of the critical incident, John Flanagan (1954) designed this method for collecting direct observations of behavior to be able to note the appropriateness and usefulness of a type of behavior in a given situation. This was done so that a number of psychological principles could be applied to whatever was being analyzed. In this case a job is being analyzed and its essential components and behaviors are observed in order to increase the performance of an individual in fulfilling their objectives (Flanagan, 1954). The reliability of the critical incident method has been a topic of discussion and studies have shown that there is a low to moderate level of interrater reliability from .27 to .42 (Andersson & Nielsson, 1964; Koch, Strobel, Kici, & Westhoff, 2009). Despite these lower ratings of reliability critical incident techniques have still been highly rated as effective by many subject matter experts (Koch et al, 2009). In regards to performing a job analysis this is a qualitative and subjective method. Often subject matter experts will be used to aid in the gathering of knowledges, skills, and abilities required to perform the necessary tasks, duties, and responsibilities of a position which are also gathered with the aid of subject matter experts (Flanagan, 1954).

### **Competency Job Analysis**

Competency in regards to a job analysis is a list of tasks, duties, responsibilities, knowledges, skills, and abilities that a person must have in order to be sufficiently competent at a given position (Bodnarchuk, 2012). In other words competencies are a list of qualifications that a person will need in order to fulfill the objectives of that position. Being competent means having the skills, experience, knowledge, values, and even personal attributes of a person that has already been successful on the job or is predicted to be successful on the job (Bodnarchuk, 2012). Competencies can also move beyond the boundaries of simple behaviors and into the realm of cognitive thought processes, including critical thinking, problem solving, and conflict resolution (Bodnarchuk, 2012). A disadvantage of this method however is it mostly relies on past behaviors to predict the future and in the current work market past behaviors are becoming more and more obsolete. However a method of competency modeling that would be able to predict what the future competencies for a position will be would be valuable (Bodnarchuk, 2012). Competency analyses were not performed in this field project but they are still viewed as a traditional and worthwhile method of performing job analysis (Bodnarchuk, 2012).

### **Current Project**

In this field project a small Midwestern technology manufacturing business was in need of human resource services that it could not provide itself due to its small size and lack of personnel with the appropriate skill set. The particular human resource services needed were a set of job analyses of the organization's current positions and a number of future positions they desired to create. It needed these analyses to help it better organize its workforce with training and development programs and to clarify what the tasks, duties, and responsibilities were of the position holders. It also needed this information to be able to form a structured recruitment and selection procedure as the company grew. This was needed so that the organization could know

what knowledges, skills, and abilities would be needed to fill the vacancies for the future growth of the company.

First a set of data was gathered from O\*NET, which is the nation's primary source of occupation information. The database that is central to the O\*NET project contains information of numerous descriptors that are standardized, commonly accepted in the work force and are occupation specific. This database is constantly kept up to date by the support of the US Department of Labor/Employment and Training Administration (USDOL/ETA) (About O\*NET, n.d.). This gathering of data was the task analysis method that was performed. This was done so that a general, standardized and occupation specific foundation of TDRs, and KSAOs could be established for each job title. After the data was gathered and organized from O\*NET it was reworded into a questionnaire format and presented to a panel of subject matter experts for a position analysis to give the project some quantitative results. Lastly the results were taken from the panel and were compared to a list of critical incidents created by the panel of subject matter experts to determine if there were any missing TDRs, and KSAOs. The data gathered from this final step was then used to create the job descriptions for each of the 18 job titles. It was hypothesized that the combination of job analysis techniques would result in a satisfactory and accurate set of job descriptions for the organization according to a panel of subject matter experts.



## **Chapter III: Methods**

### **Instruments and Participants**

The methods used in this study were a combination of task analysis, critical incident, and position analysis techniques. O\*NET was used for its vast information as a foundation to draw information for the other two methods and to perform a general task analysis for each of the selected job titles. The organization consisted of approximately 14 personnel with varying degrees of experience and education. From the organization seven of the 14 personnel were used as subject matter experts for this field project. The seven individuals were used as subject matter experts because they were either current position holders for the job titles being analyzed or were in supervisory positions of the selected job titles. The list of job titles that were to be analyzed were administrative assistant, assembly lead, assembly technician, purchasing agent, chief executive officer, chief financial officer, director of business development, director of marketing, executive assistant, general manager of operations, human resource manager, manufacturing engineer, manufacturing manager, production supervisor, receptionist, sales clerk, sales representative, and vice president of sales.

### **O\*NET**

O\*NET is a government funded program that seeks to standardize occupational specific job descriptions and additional information for a variety of purposes. In this instance, O\*NET is being used as a database to draw data for an initial task analysis. The task analysis will consist of reports from the O\*NET database as of September through December of 2012 (<http://www.onetonline.org/>).

### **Task Analysis**

Task analysis attempts to provide a description of observable aspects of behavior at every level possible that lead to the successful completion of the objective given to a position. The task analysis also gives the position holder a view of the structure of the tasks that need to be performed (Embrey, 2000).

### **Position Analysis**

A method of job analysis that attempts to deliver a set of quantitative data that gives an overview of how frequent tasks, duties, responsibilities are performed and how important knowledges, skills, and abilities are to the successful completion of the objective the position was created to fulfill (Karasek et al, 1998).

### **Critical Incident**

Critical incidents are actions, behaviors, though processes, tasks, duties, responsibilities, knowledges, skills, and abilities that is necessary for the success of the position at accomplishing the position's objective (Flanagan, 1954).

### **Procedure**

The job analyst was a significant distance from the organization and therefore presented with the difficulty of being unable to physically meet with the organization on a regular basis. Also due to the unique nature of the industry of the business many traditional job analysis methods would have proven to be not applicable in this instance. In order to establish accurate job descriptions for this organization a multi-method approach was used. A combination of a task analysis, critical incident, and position analysis was used for this field project. O\*NET was used to gather a list of commonly accepted tasks, duties, responsibilities, knowledge, skills, and abilities for each job title to set a foundation for the job analysis and as a general database for the other two methods that were used. The purpose of O\*NET was to act as a task analysis tool.

Then questionnaires were formed from the gathered O\*NET data and administered in a position analysis method to the subject matter experts to have them rate the TDRs and KSAs according to relevance and frequency of use for the given job titles. This was done to add more quantitative type data to the project to diversify the data. Last the SMEs were asked to note any TDRs or KSAs they thought missing from the list of TDRs and KSAs for each of the 18 job titles. Essentially the last step for the SMEs was to create a critical incident list for each of the 18 job titles.

## **Chapter IV: Results**

The results of the field project were 18 general, flexible, and accurate job descriptions for the organization. Each job title was analyzed using the methods of task analysis, critical incident, and position analysis. The use of O\*NET as a foundation and general source of tasks, duties, responsibilities, knowledge, skills, and abilities proved to be useful in performing the job analyses. The data gathered from O\*NET in the task analysis proved to be acceptable to the SMEs as a base for the position analysis. From the O\*NET foundation 18 questionnaires were formed that were administered to subject matter experts for analysis. The results from the position analysis also yielded satisfactory data as judged by the SMEs for the use of creating job descriptions. Lastly the critical incident list was found to be satisfactory by the panel of SMEs for the use of creating the job descriptions. The results from this multi-method approach produced 18 job descriptions that included information on the name of the job title, the general job description of the job title, a list of tasks, duties, and responsibilities of the job title, a list of knowledges, skills, and abilities for the job title and lastly qualifications for experience and education for the job title. All of which were approved by the panel of SMEs from the organization.

From these results a number of other human resource functions were put into planning stages for the further development of the organization. Some of these human resource functions included a training program for the sales department and a performance evaluation procedure for the sales department. Further the need for a performance evaluation procedure was discussed for each job title in the organization to further improve efficiency and effectiveness of each job holder. Plans for a recruitment and selection procedure were discussed including interview structures, interviewees, and the commencement of tracking employee files. The formation of an

organizational hierarchy chart was also discussed upon completion of the job analysis. In the case of this field project job analysis and the methods used proved to be satisfactory on all accounts for the completion of this project. Further the effects of having performed a job analysis have aided the company in further organizing its efforts to become more efficient and effective in performing its goals and objectives.

### **O\*NET and Task Analysis**

The results from using O\*NET were in support of the hypothesis that O\*NET would serve as a satisfactory tool from which a task analysis could be drawn. In fact so much data was drawn from O\*NET that it needed to be trimmed down prior to transforming the data into questionnaires. Granted there were many redundancies in the tasks, duties, responsibilities, knowledges, skills, and abilities, but that was acceptable for the use of O\*NET in this instance. The task analysis that was created from O\*NET also was in favor of the hypothesis that a very general task analysis would prove satisfactory to move into the next step of forming the position analysis questionnaire.

### **Position Analysis**

From the task analysis 18 questionnaires were formed, one for each specific job title. These 18 questionnaires ranged from as little as 30 items to most being over 60 items in length. The results of the position analysis revealed the true unique nature of many of the job titles in this particular organization because many of the tasks, duties, responsibilities, knowledges, skills, and abilities were not what was commonly expected for many of the job titles. The results of the position analyses for each job title can be seen as the majority of the final job description for most of the job titles.

### **Critical Incidents**

The critical incidents were done separately from the other methods and then compared to the findings from the position analysis to determine if there were any other gaps in the necessary TDRs and KSAs recorded up to this point in the job descriptions. For the critical incidents for each job description the panel of SMEs was asked to note any TDRs or KSAs they perceived as essential for each of the job titles. These generated lists of TDRs and KSAs were then compared to the results of the position analysis method. Redundancies were eliminated and the remaining TDRs or KSAs were added to the job descriptions. Many instances this provided very helpful results from the SMEs and allowed for still a general yet accurate and job specific description to be formed.

## **Chapter V: Discussion**

Job analysis is a human resource activity that since its formal development has been essential to almost every aspect of organizing TDRs and specifying KSAs for particular positions. Even before its formal development it was important to delineate what each position's TDRs were and what KSAs the person or thing needed to have in order to accomplish the purpose of the position. Without this basic concept there could be no organization of any kind. This activity is not one that is going to go away in any foreseeable future. Therefore new methods have been discussed and used in the field to determine their usefulness and effectiveness in aiding the evolutionary nature of our workplace. As the economy evolves so must the activities that support that market. As can be seen from this field project the combination and adaptation of traditional methods has proved to be quite flexible and effective, even for an organization as unique as the one in this project.

The methods chosen, position analysis, task analysis, and critical incident, were effective for this organization because it allowed for the researcher and the SMEs to have an already established foundation and a database to draw information from. Then the position analysis and the critical incident analysis allowed for a molding and refining process to occur to produce the job descriptions that were needed for the organization to have order and to operate more efficiently. In small companies there is often a spillover effect of TDRs to other personnel in the organization because there are often not enough people to fill every needed responsibility. This requires flexibility instead of rigidity in a job description to allow for organization and order to continue even when it is too much work for the one position to accomplish all of its TDRs. Even for larger organizations this is important because the traditional organization is all but gone.

The organization that remains the same for too long is often an organization that fails (Kelley, 2011). The concept used in this field project applies not only for small businesses but also for larger organizations (Kelley, 2011). Furthermore the flexibility and usefulness of this type of procedure is not limited to what the results of this project produced. Due to the nature of the produced job descriptions this will allow for the organization to develop a number of procedures, plans, policies, processes, and structures to help the company to grow and form as it needs to in order to be successful in today's economy and ever changing market. Certainly one could say that any sort of job analysis of any kind would have had a similar effect for this company and this could be very true. The difference between performing a traditional method of job analysis and the results from this project is that the results are much more encompassing and much more flexible than a traditional one method approach could produce.

A traditional method of job analysis such as performing a task analysis alone would most likely have not discovered any of the deficiencies in the job titles that were found from performing the position analysis and using the critical incident method. Using a position analysis alone would have proven to be much more time consuming without having the database of O\*NET to first produce a task analysis with which to create the questionnaire for the position analysis.

Overall it can be seen that this field project was not a typical case for a job analysis and that traditional methods could have still proven useful, they would not have produced as complete of results as this method did for the organization. This method was an evolutionary process from gathering the data from O\*NET until the completion of the job descriptions. The dataset became less ambiguous and more focused on the particular job title that was being analyzed. A continued analysis of the finished job descriptions is as always a must. Time will



be the true subject matter expert to determine if these job descriptions were in fact flexible yet useful enough to aid the company in its industry and future success.

Attempting to grow an organization without first performing a job analysis can have numerous negative consequences and at times can be very costly. As seen in this field project's experience, the company began to grow without these procedures and there were many consequences. The results were redundant and in some cases ineffective positions were created and populated therefore costing the organization valuable resources. Additionally the organization involved in this field project attempted to create a training program without having first conducted a job analysis on the position needing to be trained. The results were that the goals and objectives for the training program were unclear and difficult to determine. The deficiency in knowledge, skills, and abilities was nearly impossible to identify effectively. The required tasks, duties, and responsibilities of the position that required the training was also difficult to determine. Furthermore it was discovered that the desired training program, although still useful, was not the issue that needed attention in this stage of the organization's life span. In this stage of the organization's life, the issues that were occurring were growing pains that were hidden by the lack of data on job descriptions and other organizational issues. Having this job description data would have identified which positions had the particular responsibilities that were causing many of the issues.

### **Limitations and Conclusions**

Compared with the literature on the topic of job analysis this field project attempted to use a more strategic method instead of the traditional approach to job analysis. The literature identified several areas of concern for traditional approaches to job analysis and why new methods needed to be developed (Singh, 2008; Sanchez & Levine, 2000). As identified in the

literature the same concerns regarding traditional job analysis were found within this organization. A simple task analysis would have proven too general to be applicable and critical incident or position analysis would have had no starting point without the task analysis and potentially could have missed important TDRs or KSAs. Granted combining the methods does not necessarily guarantee that every possible scenario is covered but it gives a greater confidence than the traditional methods alone. The limitations of the field project included the available time of the SMEs to be able to participate in the analysis. Often times some of the SMEs were not able to participate in the analysis process due to work demands. In the future performing the job analysis from inside the organization instead of outside could provide different results that could be even more applicable to the situation.

Some limitations of the project included not always having access to all of the SMEs at the same time and required the project to be more flexible and required additional work on the part of the researcher to combine the data from the SMEs. Additionally O\*NET surprisingly did not have information on a few of the chosen job titles in any category. The job titles were chosen for their general use in the market but even still some did not appear on the O\*NET database so other means were needed to create the task analysis for those positions.

It can be concluded from this study that an evolutionary approach to job analysis or a combination of methods is a very viable solution to many of the issues that face organizations and job analysts when performing job analyses. Future research into this subject would include the combination of other methods either together with the methods used here or in a different set of combinations to observe the results of those analyses.

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## Appendix A: Completed Job Analyses Samples

<b>Job Title:</b>	Administrative Assistant		
<b>Job Description</b>	Perform routine clerical and administrative functions such as drafting correspondence, scheduling appointments, organizing and maintaining paper and electronic files, or providing information to callers.		
<b>TASKS, DUTIES, AND RESPONSIBILITIES</b>			
<ul style="list-style-type: none"><li>• Frequently use computers for various applications, such as database management or word processing.</li><li>• Frequently answer telephones and give information to callers, take messages, or transfer calls to appropriate individuals.</li><li>• Frequently set up and manage paper or electronic filing systems, recording information, updating paperwork, or maintaining documents, such as attendance records, correspondence, or other material.</li><li>• Frequently operate office equipment, such as fax machines, copiers, or phone systems and arrange for repairs when equipment malfunctions.</li><li>• Frequently greet visitors or callers and handle their inquiries or direct them to the appropriate persons according to their needs.</li><li>• Frequently maintain scheduling and event calendars.</li><li>• Frequently complete forms in accordance with company procedures.</li><li>• Frequently make copies of correspondence or other printed material.</li><li>• Frequently provide information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person.</li><li>• Frequently develop constructive and cooperative working relationships with others, and maintaining them over time.</li><li>• Occasionally perform for people or deal directly with the public. This includes receiving clients or guests.</li><li>• Occasionally create, maintain, and enter information into databases.</li><li>• Occasionally schedule and confirm appointments for clients, customers, or supervisors.</li><li>• Occasionally unstructured work will be required. Meaning the job holder will determine tasks, priorities and goals for themselves occasionally.</li><li>• Occasionally repetitive work will be required for the job holder.</li></ul>			
<b>KNOWLEDGE, SKILLS, AND ABILITIES</b>			
<ul style="list-style-type: none"><li>• It is required to have knowledge of administrative and clerical procedures and systems such as word processing, managing files and records, stenography and transcription, designing forms, and other office procedures and terminology.</li><li>• It is required to have knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.</li><li>• It is required to be able to communicate effectively in writing as appropriate for the needs of the audience.</li><li>• It is required to be able to give full attention to what other people are saying, taking time</li></ul>			

to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.

- It is required to be able to understand written sentences and paragraphs in work related documents.
- It is required to be able to talk to others to convey information effectively.
- It is required to be able to manage one's own time and the time of others.
- It is required to be able to actively look for ways to help people.
- It is preferred to have knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.
- It is preferred to have knowledge of business and management principles involved in strategic planning, resource allocation, human resources modeling, leadership technique, production methods, and coordination of people and resources.
- It is typical to work 31 to 40 hours per week for this position.

#### **EDUCATION AND EXPERIENCE**

- It is required to have at least an Associate's Degree for this position.
- It is required to have at least 1 to 3 years of experience for this position.

Table 2

<b>Job Title:</b>	Assembly Lead		
<b>Job Description</b>	Directly supervise and coordinate the activities of production and operating workers, such as inspectors, precision workers, machine setters and operators, assemblers, fabricators, and plant and system operators.		
<b>TASKS, DUTIES, AND RESPONSIBILITIES</b>			
<ul style="list-style-type: none"><li>• Enforce safety and sanitation regulations.</li><li>• Direct and coordinate the activities of employees engaged in the production or processing of goods, such as inspectors, machine setters, and fabricators.</li><li>• Confer with other supervisors to coordinate operations and activities within or between departments.</li><li>• Plan and establish work schedules, assignments, and production sequences to meet production goals.</li><li>• Inspect materials, products, or equipment to detect defects or malfunctions.</li><li>• Observe work and monitor gauges, dials, and other indicators to ensure that operators conform to production or processing standards.</li><li>• Conduct employee training in equipment operations or work and safety procedures, or assign employee training to experienced workers.</li><li>• Interpret specifications, blueprints, job orders, and company policies and procedures for workers.</li><li>• Keep records of employees' attendance and hours worked.</li><li>• Read and analyze charts, work orders, production schedules, and other records and reports to determine production requirements and to evaluate current production estimates and outputs.</li></ul>			



## **KNOWLEDGE, SKILLS, AND ABILITIES**

- Knowledge of raw materials, production processes, quality control, costs, and other techniques for maximizing the effective manufacture and distribution of goods.
- Knowledge of machines and tools, including their designs, uses, repair, and maintenance.
- Knowledge of business and management principles involved in strategic planning, resource allocation, human resources modeling, leadership technique, production methods, and coordination of people and resources.
- Knowledge of principles and procedures for personnel recruitment, selection, training, compensation and benefits, labor relations and negotiation, and personnel information systems.
- Knowledge of the practical application of engineering science and technology. This includes applying principles, techniques, procedures, and equipment to the design and production of various goods and services.
- Knowledge of circuit boards, processors, chips, electronic equipment, and computer hardware and software, including applications and programming.
- Knowledge of principles and methods for curriculum and training design, teaching and instruction for individuals and groups, and the measurement of training effects.
- Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
- Talking to others to convey information effectively.
- Adjusting actions in relation to others' actions.
- Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.
- Motivating, developing, and directing people as they work, identifying the best people for the job.
- Managing one's own time and the time of others.
- Considering the relative costs and benefits of potential actions to choose the most appropriate one.
- Monitoring/Assessing performance of yourself, other individuals, or organizations to make improvements or take corrective action
- The ability to apply general rules to specific problems to produce answers that make sense.
- The ability to listen to and understand information and ideas presented through spoken words and sentences.
- The ability to communicate information and ideas in speaking so others will understand.
- The ability to tell when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing there is a problem.
- The ability to combine pieces of information to form general rules or conclusions (includes finding a relationship among seemingly unrelated events).

## **EDUCATION AND EXPERIENCE**

- It is required to have at least a high school diploma for this position.
- It is required to have at least 1 to 3 years of experience for this position.

Table 3

<b>Job Title:</b>	Assembly Technician		
<b>Job Description</b>	Assemble or modify electrical or electronic equipment, such as computers, test equipment telemetering systems, electric motors, and batteries.		
<b>TASKS, DUTIES, AND RESPONSIBILITIES</b>			
<ul style="list-style-type: none"><li>• Inspect or test wiring installations, assemblies, or circuits for resistance factors or for operation and record results.</li><li>• Assemble electrical or electronic systems or support structures and install components, units, subassemblies, wiring, or assembly casings, using rivets, bolts, soldering or micro-welding equipment.</li><li>• Adjust, repair, or replace electrical or electronic component parts to correct defects and to ensure conformance to specifications.</li><li>• Clean parts, using cleaning solutions, air hoses, and cloths.</li><li>• Read and interpret schematic drawings, diagrams, blueprints, specifications, work orders, or reports to determine materials requirements or assembly instructions.</li><li>• Mark and tag components so that stock inventory can be tracked and identified.</li><li>• Position, align, or adjust work pieces or electrical parts to facilitate wiring or assembly.</li><li>• Pack finished assemblies for shipment and transport them to storage areas, using hoists or hand trucks.</li><li>• Confer with supervisors or engineers to plan or review work activities or to resolve production problems.</li><li>• Explain assembly procedures or techniques to other workers.</li></ul>			
<b>KNOWLEDGE, SKILLS, AND ABILITIES</b>			
<ul style="list-style-type: none"><li>• Knowledge of raw materials, production processes, quality control, costs, and other techniques for maximizing the effective manufacture and distribution of goods.</li><li>• Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.</li><li>• Monitoring/Assessing performance of yourself, other individuals, or organizations to make improvements or take corrective action.</li><li>• Talking to others to convey information effectively.</li><li>• Understanding written sentences and paragraphs in work related documents.</li><li>• Watching gauges, dials, or other indicators to make sure a machine is working properly.</li><li>• Controlling operations of equipment or systems.</li><li>• The ability to quickly move your hand, your hand together with your arm, or your two hands to grasp, manipulate, or assemble objects.</li><li>• The ability to listen to and understand information and ideas presented through spoken words and sentences.</li><li>• The ability to combine pieces of information to form general rules or conclusions (includes finding a relationship among seemingly unrelated events).</li></ul>			

- The ability to arrange things or actions in a certain order or pattern according to a specific rule or set of rules (e.g., patterns of numbers, letters, words, pictures, mathematical operations).
- The ability to imagine how something will look after it is moved around or when its parts are moved or rearranged.

#### **EDUCATION AND EXPERIENCE**

- It is required to have at least a high school diploma for this position.
- It is not required to have any experience for this position.

Table 4

<b>Job Title:</b>	Purchasing Agent		
<b>Job Description</b>	Buy merchandise or commodities, other than farm products, for resale to consumers at the wholesale or retail level, including both durable and nondurable goods. Analyze past buying trends, sales records, price, and quality of merchandise to determine value and yield. Select, order, and authorize payment for merchandise according to contractual agreements. May conduct meetings with sales personnel and introduce new products. Includes assistant wholesale and retail buyers of nonfarm products.		
<b>TASKS, DUTIES, AND RESPONSIBILITIES</b>			
<ul style="list-style-type: none"><li>• Use computers to organize and locate inventory, and operate spreadsheet and word processing software.</li><li>• Negotiate prices, discount terms and transportation arrangements for merchandise.</li><li>• Manage the department for which they buy.</li><li>• Confer with sales and purchasing personnel to obtain information about customer needs and preferences.</li><li>• Examine, select, order, and purchase at the most favorable price merchandise consistent with quality, quantity, specification requirements and other factors.</li><li>• Monitor and analyze sales records, trends, or economic conditions to anticipate consumer buying patterns and determine what the company will sell and how much inventory is needed.</li><li>• Set or recommend mark-up rates, mark-down rates, and selling prices for merchandise.</li><li>• Authorize payment of invoices or return of merchandise.</li><li>• Interview and work closely with vendors to obtain and develop desired products.</li><li>• Conduct staff meetings with sales personnel to introduce new merchandise.</li></ul>			
<b>KNOWLEDGE, SKILLS, AND ABILITIES</b>			
<ul style="list-style-type: none"><li>• Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.</li></ul>			

- Knowledge of business and management principles involved in strategic planning, resource allocation, human resources modeling, leadership technique, production methods, and coordination of people and resources.
- Knowledge of principles and methods for showing, promoting, and selling products or services. This includes marketing strategy and tactics, product demonstration, sales techniques, and sales control systems.
- Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.
- Knowledge of economic and accounting principles and practices, the financial markets, banking and the analysis and reporting of financial data.
- Knowledge of raw materials, production processes, quality control, costs, and other techniques for maximizing the effective manufacture and distribution of goods.
- Knowledge of administrative and clerical procedures and systems such as word processing, managing files and records, stenography and transcription, designing forms, and other office procedures and terminology.
- Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
- Bringing others together and trying to reconcile differences.
- Persuading others to change their minds or behavior.
- Talking to others to convey information effectively.
- Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.
- Understanding the implications of new information for both current and future problem-solving and decision-making.
- Identifying complex problems and reviewing related information to develop and evaluate options and implement solutions.
- Adjusting actions in relation to others' actions.
- Considering the relative costs and benefits of potential actions to choose the most appropriate one.
- The ability to communicate information and ideas in speaking so others will understand.
- The ability to apply general rules to specific problems to produce answers that make sense.
- The ability to tell when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing there is a problem.
- The ability to generate or use different sets of rules for combining or grouping things in different ways.

#### **EDUCATION AND EXPERIENCE**

- This position requires at least an Associate's Degree.
- This position requires 1 to 3 years of experience.

Table 5

<b>Job Title:</b>	Director of Business		
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	Development		
<b>Job Description</b>	As business becomes more complex and globally-focused, skilled leadership becomes more vital every day. A director of business development helps organizations remain competitive and grow according to plan by identifying, assessing and developing new business opportunities. Setting your sights on a career as a director of business development can be possible when you enroll in an MBA program with a specialization in Management.		
<b>TASKS, DUTIES, AND RESPONSIBILITIES</b>			
<ul style="list-style-type: none"><li>• Identifies trendsetter ideas by researching industry and related events, publications, and announcements; tracking individual contributors and their accomplishments.</li><li>• Locates or proposes potential business deals by contacting potential partners; discovering and exploring opportunities.</li><li>• Screens potential business deals by analyzing market strategies, deal requirements, potential, and financials; evaluating options; resolving internal priorities; recommending equity investments.</li><li>• Develops negotiating strategies and positions by studying integration of new venture with company strategies and operations; examining risks and potentials; estimating partners' needs and goals.</li><li>• Closes new business deals by coordinating requirements; developing and negotiating contracts; integrating contract requirements with business operations.</li><li>• Protects organization's value by keeping information confidential.</li><li>• Updates job knowledge by participating in educational opportunities; reading professional publications; maintaining personal networks; participating in professional organizations.</li><li>• Enhances organization reputation by accepting ownership for accomplishing new and different requests; exploring opportunities to add value to job accomplishments.</li></ul>			
<b>KNOWLEDGE, SKILLS, AND ABILITIES</b>			
<ul style="list-style-type: none"><li>• It is required to have knowledge of managerial economics for this position.</li><li>• It is required to have knowledge of international business for this position.</li><li>• It is required to have knowledge of financial management for this position.</li><li>• It is required to have knowledge of production management for this position.</li><li>• It is required to have knowledge of business management for this position.</li></ul>			
<b>EDUCATION AND EXPERIENCE</b>			
<ul style="list-style-type: none"><li>• This position requires at least a Bachelor’s Degree. This position requires at least 3 to 5 years of experience</li></ul>			

Table 6

<b>Job Title:</b>	Director of Marketing		
<b>Job Description</b>	Plan, direct, or coordinate marketing policies and programs, such as determining the demand for products and services offered by a firm and its		

	competitors, and identify potential customers. Develop pricing strategies with the goal of maximizing the firm's profits or share of the market while ensuring the firm's customers are satisfied. Oversee product development or monitor trends that indicate the need for new products and services.
<p><b>TASKS, DUTIES, AND RESPONSIBILITIES</b></p> <ul style="list-style-type: none"> <li>• Formulate, direct and coordinate marketing activities and policies to promote products and services, working with advertising and promotion managers.</li> <li>• Identify, develop, or evaluate marketing strategy, based on knowledge of establishment objectives, market characteristics, and cost and markup factors.</li> <li>• Direct the hiring, training, or performance evaluations of marketing or sales staff and oversee their daily activities.</li> <li>• Evaluate the financial aspects of product development, such as budgets, expenditures, research and development appropriations, or return-on-investment and profit-loss projections.</li> <li>• Develop pricing strategies, balancing firm objectives and customer satisfaction.</li> <li>• Compile lists describing product or service offerings.</li> <li>• Initiate market research studies or analyze their findings.</li> <li>• Use sales forecasting or strategic planning to ensure the sale and profitability of products, lines, or services, analyzing business developments and monitoring market trends.</li> <li>• Coordinate or participate in promotional activities or trade shows, working with developers, advertisers, or production managers, to market products or services.</li> <li>• Consult with buying personnel to gain advice regarding the types of products or services expected to be in demand.</li> </ul> <p><b>KNOWLEDGE, SKILLS, AND ABILITIES</b></p> <ul style="list-style-type: none"> <li>• Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.</li> <li>• Knowledge of principles and methods for showing, promoting, and selling products or services. This includes marketing strategy and tactics, product demonstration, sales techniques, and sales control systems.</li> <li>• Knowledge of business and management principles involved in strategic planning, resource allocation, human resources modeling, leadership technique, production methods, and coordination of people and resources.</li> <li>• Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.</li> <li>• Being aware of others' reactions and understanding why they react as they do.</li> <li>• Talking to others to convey information effectively.</li> <li>• Considering the relative costs and benefits of potential actions to choose the most appropriate one.</li> <li>• Monitoring/Assessing performance of yourself, other individuals, or organizations to make improvements or take corrective action.</li> <li>• Understanding the implications of new information for both current and future problem-solving and decision-making.</li> </ul>	

- Adjusting actions in relation to others' actions.
- Analyzing needs and product requirements to create a design.
- The ability to communicate information and ideas in speaking so others will understand.
- The ability to apply general rules to specific problems to produce answers that make sense.
- The ability to apply general rules to specific problems to produce answers that make sense.
- The ability to combine pieces of information to form general rules or conclusions (includes finding a relationship among seemingly unrelated events).
- The ability to come up with unusual or clever ideas about a given topic or situation, or to develop creative ways to solve a problem.
- The ability to come up with a number of ideas about a topic (the number of ideas is important, not their quality, correctness, or creativity).
- The ability to tell when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing there is a problem.

#### **EDUCATION AND EXPERIENCE**

- At least a Bachelor's Degree is required for this position.
- At least 3 to 5 years of experience are required for this position.

Table 7

<b>Job Title:</b>	Executive Assistant		
<b>Job Description</b>	Provide high-level administrative support by conducting research, preparing statistical reports, handling information requests, and performing clerical functions such as preparing correspondence, receiving visitors, arranging conference calls, and scheduling meetings. May also train and supervise lower-level clerical staff.		
<b>TASKS, DUTIES, AND RESPONSIBILITIES</b>			
<ul style="list-style-type: none"><li>• Frequently prepare invoices, reports, memos, letters, financial statements and other documents, using word processing, spreadsheet, database, or presentation software.</li><li>• Frequently conduct research, compile data, and prepare papers for consideration and presentation by executives, committees and boards of directors.</li><li>• Frequently attend meetings to record minutes.</li><li>• Frequently greet visitors and determine whether they should be given access to specific individuals.</li><li>• Frequently read and analyze incoming memos, submissions, and reports to determine their significance and plan their distribution.</li><li>• Frequently file and retrieve corporate documents, records, and reports.</li><li>• Frequently open, sort, and distribute incoming correspondence, including faxes and email.</li><li>• Frequently make travel arrangements for executives.</li><li>• Occasionally answer phone calls and direct calls to appropriate parties or take messages.</li><li>• Occasionally perform general office duties, such as ordering supplies, maintaining</li></ul>			

records management database systems, and performing basic bookkeeping work.

- Occasionally it is required to perform unstructured work meaning the job holder may determine tasks, priorities, and goals independently.
- Occasionally tasks need to be repeated such as: key entry, checking entries in a ledger, and etc.

### **KNOWLEDGE, SKILLS, AND ABILITIES**

- It is required to have knowledge of administrative and clerical procedures and systems such as word processing, managing files and records, stenography and transcription, designing forms, and other office procedures and terminology.
- It is required to have knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.
- It is required to have knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.
- It is required to give full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupt at inappropriate times.
- It is required to understand written sentences and paragraphs in work related documents.
- It is required to talk to others to convey information effectively.
- It is required to actively look for ways to help people.
- It is required to communicate effectively in writing as appropriate for the needs of the audience.
- It is required to adjust actions in relation to others' actions.
- It is required to manage one's own time and the time of others.
- It is required to be aware of others' reactions and understanding why they react as they do.
- It is required to monitor/assess performance of yourself, other individuals, or organizations to make improvements or take corrective action.
- It is required to have the ability to read and understand information and ideas presented in writing.
- It is required to have the ability to communicate information and ideas in writing so others will understand.
- It is typically required to work 31-40 hours a week.
- It is required to have at least an associate's degree.
- It is required to have at least 3-5 years of prior experience.
- It is preferred to have knowledge of circuit boards, processors, chips, electronic equipment, and computer hardware and software, including applications and programming.
- It is preferred to understand the implications of new information for both current and future problem-solving and decision-making.
- It is preferred to have the ability to arrange things or actions in a certain order or pattern according to a specific rule or set of rules (e.g., patterns of numbers, letters, words, pictures, mathematical operations).



- It is preferred to have the ability to apply general rules to specific problems to produce answers that make sense.
- It is preferred to have the ability to tell when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing there is a problem.
- It is typical to work 31 to 40 hours per week in this position.

#### **EDUCATION AND EXPERIENCE**

- It is required to have at least 3 to 5 years of experience for this position.
- It is required to have at least an Associate's Degree for this position.

Table 8

Job Title:	General Manager of Operations		
Job Description	Plan, direct, or coordinate the operations of public or private sector organizations. Duties and responsibilities include formulating policies, managing daily operations, and planning the use of materials and human resources, but are too diverse and general in nature to be classified in any one functional area of management or administration, such as personnel, purchasing, or administrative services.		
TASKS, DUTIES, AND RESPONSIBILITIES			
<ul style="list-style-type: none"><li>• Oversee activities directly related to making products or providing services.</li><li>• Direct and coordinate activities of businesses or departments concerned with the production, pricing, sales, or distribution of products.</li><li>• Review financial statements, sales and activity reports, and other performance data to measure productivity and goal achievement and to determine areas needing cost reduction and program improvement.</li><li>• Manage staff, preparing work schedules and assigning specific duties.</li><li>• Direct and coordinate organization's financial and budget activities to fund operations, maximize investments, and increase efficiency.</li><li>• Establish and implement departmental policies, goals, objectives, and procedures, conferring with board members, organization officials, and staff members as necessary.</li><li>• Determine staffing requirements, and interview, hire and train new employees, or oversee those personnel processes.</li><li>• Plan and direct activities such as sales promotions, coordinating with other department heads as required.</li><li>• Determine goods and services to be sold, and set prices and credit terms, based on forecasts of customer demand.</li><li>• Locate, select, and procure merchandise for resale, representing management in purchase negotiations.</li></ul>			
KNOWLEDGE, SKILLS, AND ABILITIES			
<ul style="list-style-type: none"><li>• Knowledge of business and management principles involved in strategic planning, resource allocation, human resources modeling, leadership technique, production</li></ul>			

methods, and coordination of people and resources.

- Knowledge of principles and procedures for personnel recruitment, selection, training, compensation and benefits, labor relations and negotiation, and personnel information systems.
- Knowledge of raw materials, production processes, quality control, costs, and other techniques for maximizing the effective manufacture and distribution of goods.
- Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
- Understanding written sentences and paragraphs in work related documents.
- Talking to others to convey information effectively.
- Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.
- Monitoring/Assessing performance of yourself, other individuals, or organizations to make improvements or take corrective action.
- Adjusting actions in relation to others' actions.
- Being aware of others' reactions and understanding why they react as they do.
- Understanding the implications of new information for both current and future problem-solving and decision-making.
- Identifying complex problems and reviewing related information to develop and evaluate options and implement solutions.
- Considering the relative costs and benefits of potential actions to choose the most appropriate one.
- The ability to communicate information and ideas in speaking so others will understand.
- The ability to tell when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing there is a problem.
- The ability to communicate information and ideas in writing so others will understand.
- The ability to apply general rules to specific problems to produce answers that make sense.
- The ability to combine pieces of information to form general rules or conclusions (includes finding a relationship among seemingly unrelated events).

#### **EDUCATION AND EXPERIENCE**

- It is required to have at least an associate's degree for this position.
- It is required to have at least 3 to 5 years of previous experience for this position

Table 9

<b>Job Title:</b>	Human Resource Manager		
<b>Job Description</b>	Plan, direct, or coordinate human resources activities and staff of an organization.		
<b>TASKS, DUTIES, AND RESPONSIBILITIES</b>			
<ul style="list-style-type: none"><li>• Frequently serve as a link between management and employees by handling questions, interpreting and administering contracts and helping resolve work-related problems.</li><li>• Frequently analyze and modify compensation and benefits policies to establish</li></ul>			

competitive programs and ensure compliance with legal requirements.

- Frequently advise managers on organizational policy matters such as equal employment opportunity and sexual harassment, and recommend needed changes.
- Frequently perform difficult staffing duties, including dealing with understaffing, refereeing disputes, firing employees, and administering disciplinary procedures.
- Frequently plan and conduct new employee orientation to foster positive attitude toward organizational objectives.
- Frequently plan, direct, supervise, and coordinate work activities of subordinates and staff relating to employment, compensation, labor relations, and employee relations.
- Frequently plan, organize, direct, control or coordinate the personnel, training, or labor relations activities of an organization.
- Frequently administer compensation, benefits and performance management systems, and safety and recreation programs.
- Frequently make decisions without supervision.
- Frequently keep up-to-date technically and applying new knowledge to your job.
- Frequently analyze information and evaluating results to choose the best solution and solve problems.
- Frequently handle complaints, settling disputes, and resolving grievances and conflicts, or otherwise negotiating with others.
- Frequently recruit, interview, select, hire, and promote employees in an organization.
- Occasionally represent organization at personnel-related hearings and investigations.
- Occasionally identify staff vacancies and recruit, interview and select applicants.
- Occasionally perform unstructured work, meaning the worker determines tasks, priorities, and goals.

#### **KNOWLEDGE, SKILLS, AND ABILITIES**

- It is required to have knowledge of business and management principles involved in strategic planning, resource allocation, human resources modeling, leadership technique, production methods, and coordination of people and resources.
- It is required to have knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.
- It is required to have knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.
- It is required to have knowledge of laws, legal codes, court procedures, precedents, government regulations, executive orders, agency rules, and the democratic political process.
- It is required to have knowledge of human behavior and performance; individual differences in ability, personality, and interests; learning and motivation; psychological research methods; and the assessment and treatment of behavioral and affective disorders.
- It is required to have knowledge of principles and methods for curriculum and training design, teaching and instruction for individuals and groups, and the measurement of training effects.
- It is required to give full attention to what other people are saying, taking time to

understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.

- It is required to have the ability to motivate, develop, and direct people as they work, identifying the best people for the job.
- It is required to be able to be aware of others' reactions and understanding why they react as they do.
- It is required to be able to talk to others to convey information effectively.
- It is required to adjust actions in relation to others' actions.
- It is required to use logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.
- It is required to understand written sentences and paragraphs in work related documents.
- It is required to consider the relative costs and benefits of potential actions to choose the most appropriate one.
- It is required to be able to identify complex problems and review related information to develop and evaluate options and implement solutions.
- It is required to have the ability to apply general rules to specific problems to produce answers that make sense.
- It is required to have the ability to combine pieces of information to form general rules or conclusions (includes finding a relationship among seemingly unrelated events).
- It is required to be able to bring others together and trying to reconcile differences.
- It is required to have the ability to tell when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing there is a problem.
- It is required to have the ability to come up with a number of ideas about a topic (the number of ideas is important, not their quality, correctness, or creativity).
- It is preferred to have knowledge of arithmetic, algebra, geometry, calculus, statistics, and their applications.
- It is typical to work up to 40 hours per week for this position on a regular basis.

#### **EDUCATION AND EXPERIENCE**

- It is required to have a Bachelor's Degree to perform this job.
- It is required to have 3 to 5 years of experience to perform this job.

Table 10

Table 16			
Job Title:	Manufacturing Engineer		
Job Description	Design, integrate, or improve manufacturing systems or related processes. May work with commercial or industrial designers to refine product designs to increase productivity and decrease costs.		
TASKS, DUTIES, AND RESPONSIBILITIES			
<ul style="list-style-type: none"><li>• Identify opportunities or implement changes to improve products or reduce costs using knowledge of fabrication processes, tooling and production equipment, assembly methods, quality control standards, or product design, materials and parts.</li><li>• Determine root causes of failures using statistical methods and recommend changes in designs, tolerances, or processing methods.</li></ul>			

- Provide technical expertise or support related to manufacturing.
- Incorporate new methods and processes to improve existing operations.
- Supervise technicians, technologists, analysts, administrative staff, or other engineers.
- Troubleshoot new or existing product problems involving designs, materials, or processes.
- Review product designs for manufacturability or completeness.
- Train production personnel in new or existing methods.
- Communicate manufacturing capabilities, production schedules, or other information to facilitate production processes.
- Design, install, or troubleshoot manufacturing equipment.

#### **KNOWLEDGE, SKILLS, AND ABILITIES**

- Knowledge of the practical application of engineering science and technology. This includes applying principles, techniques, procedures, and equipment to the design and production of various goods and services.
- Knowledge of raw materials, production processes, quality control, costs, and other techniques for maximizing the effective manufacture and distribution of goods.
- Knowledge of design techniques, tools, and principles involved in production of precision technical plans, blueprints, drawings, and models.
- Knowledge of machines and tools, including their designs, uses, repair, and maintenance
- Knowledge of arithmetic, algebra, geometry, calculus, statistics, and their applications.
- Knowledge of circuit boards, processors, chips, electronic equipment, and computer hardware and software, including applications and programming.
- Knowledge and prediction of physical principles, laws, their interrelationships, and applications to understanding fluid, material, and atmospheric dynamics, and mechanical, electrical, atomic and sub- atomic structures and processes.
- Identifying complex problems and reviewing related information to develop and evaluate options and implement solutions.
- Considering the relative costs and benefits of potential actions to choose the most appropriate one.
- The ability to arrange things or actions in a certain order or pattern according to a specific rule or set of rules (e.g., patterns of numbers, letters, words, pictures, mathematical operations).

#### **EDUCATION AND EXPERIENCE**

- This position requires at least an Associate's Degree.
- This position requires at least 1 to 3 years of experience.

Table 11

<b>Job Title:</b>	Manufacturing Manager		
<b>Job Description</b>	Plan, direct, or coordinate the work activities and resources necessary for manufacturing products in accordance with cost, quality, and quantity		

	specifications.
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### **TASKS, DUTIES, AND RESPONSIBILITIES**

- Direct or coordinate production, processing, distribution, or marketing activities of industrial organizations.
- Review processing schedules or production orders to make decisions concerning inventory requirements, staffing requirements, work procedures, or duty assignments, considering budgetary limitations and time constraints.
- Review operations and confer with technical or administrative staff to resolve production or processing problems.
- Develop or implement production tracking or quality control systems, analyzing production, quality control, maintenance, or other operational reports, to detect production problems.
- Hire, train, evaluate, or discharge staff or resolve personnel grievances.
- Set and monitor product standards, examining samples of raw products or directing testing during processing, to ensure finished products are of prescribed quality.
- Prepare and maintain production reports or personnel records.
- Coordinate or recommend procedures for facility or equipment maintenance or modification, including the replacement of machines.
- Initiate or coordinate inventory or cost control programs.
- Institute employee suggestion or involvement programs.

### **KNOWLEDGE, SKILLS, AND ABILITIES**

- Knowledge of raw materials, production processes, quality control, costs, and other techniques for maximizing the effective manufacture and distribution of goods.
- Knowledge of machines and tools, including their designs, uses, repair, and maintenance.
- Knowledge of arithmetic, algebra, geometry, calculus, statistics, and their applications.
- Knowledge of business and management principles involved in strategic planning, resource allocation, human resources modeling, leadership technique, production methods, and coordination of people and resources.
- Knowledge of principles and methods for curriculum and training design, teaching and instruction for individuals and groups, and the measurement of training effects.
- Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.
- Knowledge of design techniques, tools, and principles involved in production of precision technical plans, blueprints, drawings, and models.
- Adjusting actions in relation to others' actions.
- Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.
- Motivating, developing, and directing people as they work, identifying the best people for the job.
- Managing one's own time and the time of others.

- Identifying complex problems and reviewing related information to develop and evaluate options and implement solutions.
- Considering the relative costs and benefits of potential actions to choose the most appropriate one.
- The ability to tell when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing there is a problem.
- The ability to apply general rules to specific problems to produce answers that make sense.
- The ability to communicate information and ideas in speaking so others will understand.
- The ability to combine pieces of information to form general rules or conclusions (includes finding a relationship among seemingly unrelated events).

#### **EDUCATION AND EXPERIENCE**

- It is required to have at least a Bachelor's Degree for this position.
- It is required to have at least 3 to 5 years of experience for this position.

Table 12

<b>Job Title:</b>	Production Supervisor		
<b>Job Description</b>	Directly supervise and coordinate the activities of production and operating workers, such as inspectors, precision workers, machine setters and operators, assemblers, fabricators, and plant and system operators.		
<b>TASKS, DUTIES, AND RESPONSIBILITIES</b>			
<ul style="list-style-type: none"><li>• Enforce safety and sanitation regulations.</li><li>• Direct and coordinate the activities of employees engaged in the production or processing of goods, such as inspectors, machine setters, and fabricators.</li><li>• Confer with other supervisors to coordinate operations and activities within or between departments.</li><li>• Plan and establish work schedules, assignments, and production sequences to meet production goals.</li><li>• Inspect materials, products, or equipment to detect defects or malfunctions.</li><li>• Observe work and monitor gauges, dials, and other indicators to ensure that operators conform to production or processing standards.</li><li>• Conduct employee training in equipment operations or work and safety procedures, or assign employee training to experienced workers.</li><li>• Interpret specifications, blueprints, job orders, and company policies and procedures for workers.</li><li>• Keep records of employees' attendance and hours worked.</li><li>• Read and analyze charts, work orders, production schedules, and other records and reports to determine production requirements and to evaluate current production estimates and outputs.</li></ul>			
<b>KNOWLEDGE, SKILLS, AND ABILITIES</b>			

- Knowledge of raw materials, production processes, quality control, costs, and other techniques for maximizing the effective manufacture and distribution of goods.
- Knowledge of machines and tools, including their designs, uses, repair, and maintenance.
- Knowledge of business and management principles involved in strategic planning, resource allocation, human resources modeling, leadership technique, production methods, and coordination of people and resources.
- Knowledge of business and management principles involved in strategic planning, resource allocation, human resources modeling, leadership technique, production methods, and coordination of people and resources.
- Knowledge of principles and procedures for personnel recruitment, selection, training, compensation and benefits, labor relations and negotiation, and personnel information systems.
- Knowledge of the practical application of engineering science and technology. This includes applying principles, techniques, procedures, and equipment to the design and production of various goods and services.
- Knowledge of circuit boards, processors, chips, electronic equipment, and computer hardware and software, including applications and programming.
- Knowledge of principles and methods for curriculum and training design, teaching and instruction for individuals and groups, and the measurement of training effects.
- Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
- Adjusting actions in relation to others' actions.
- Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.
- Motivating, developing, and directing people as they work, identifying the best people for the job.
- Understanding written sentences and paragraphs in work related documents.
- Managing one's own time and the time of others.
- Considering the relative costs and benefits of potential actions to choose the most appropriate one.
- Monitoring/Assessing performance of yourself, other individuals, or organizations to make improvements or take corrective action.
- The ability to apply general rules to specific problems to produce answers that make sense.
- The ability to communicate information and ideas in speaking so others will understand.
- The ability to tell when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing there is a problem.
- The ability to combine pieces of information to form general rules or conclusions (includes finding a relationship among seemingly unrelated events).
- The ability to communicate information and ideas in writing so others will understand.
- The ability to generate or use different sets of rules for combining or grouping things in different ways.



**EDUCATION AND EXPERIENCE**

- This job requires at least a high school diploma.
- This job requires 1-3 years of prior experience.

Table 13

Table 15

<b>Job Title:</b>	Receptionist		
<b>Job Description</b>	Answer inquiries and provide information to the general public, customers, visitors, and other interested parties regarding activities conducted at establishment and location of departments, offices, and employees within the organization.		
<b>TASKS, DUTIES, AND RESPONSIBILITIES</b>			
<ul style="list-style-type: none"><li>• Frequently operate telephone switchboard to answer, screen, or forward calls, providing information, taking messages, or scheduling appointments.</li><li>• Frequently greet persons entering establishment, determine nature and purpose of visit, and direct or escort them to specific destinations.</li><li>• Frequently provide information about establishment, such as location of departments or offices, employees within the organization, or services provided.</li><li>• Frequently collect, sort, distribute, or prepare mail, messages, or courier deliveries.</li><li>• Frequently provide information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person.</li><li>• Frequently observe, receive, and otherwise obtain information from all relevant sources.</li><li>• Frequently use computers and computer systems (including hardware and software) to program, write software, set up functions, enter data, or process information.</li><li>• Frequently perform day-to-day administrative tasks such as maintaining information files and processing paperwork.</li><li>• Frequently communicate with people outside the organization, representing the organization to customers, the public, government, and other external sources. This information can be exchanged in person, in writing, or by telephone or e-mail.</li><li>• Frequently perform for people or deal directly with the public. This includes serving customers in restaurants and stores, and receiving clients or guests.</li><li>• Frequently enter, transcribe, record, or maintain information in written or electronic/magnetic form.</li><li>• Frequently monitor and review information from materials, events, or the environment, to detect or assess problems.</li><li>• Frequently have telephone conversations.</li><li>• Frequently be in contact with others (face-to-face, by telephone, or otherwise) in order to perform it.</li><li>• Frequently spend time sitting.</li><li>• Frequently deal with external customers or the public.</li><li>• Frequently be exact or highly accurate in performing this job.</li><li>• Frequently work in groups or teams with this job.</li><li>• Frequently use email when performing this job.</li></ul>			

- Frequently perform repetitive work such as key entry or checking ledgers.
- Occasionally transmit information or documents to customers, using computer, mail, or facsimile machine.
- Occasionally hear and resolve complaints from customers or the public.
- Occasionally perform administrative support tasks, such as proofreading, transcribing handwritten information, or operating calculators or computers to work with pay records, invoices, balance sheets, or other documents.
- Occasionally file and maintain records.
- Occasionally receive payment and record receipts for services.
- Occasionally identify information by categorizing, estimating, recognizing differences or similarities, and detecting changes in circumstances or events.

#### **KNOWLEDGE, SKILLS, AND ABILITIES**

- It is required to have Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.
- It is required to have Knowledge of administrative and clerical procedures and systems such as word processing, managing files and records, stenography and transcription, designing forms, and other office procedures and terminology.
- It is required to have Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.
- It is required to have Knowledge of circuit boards, processors, chips, electronic equipment, and computer hardware and software, including applications and programming.
- It is required to be able to talk to others to convey information effectively.
- It is required to be able to give full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
- It is required to be able to actively look for ways to help people.
- It is required to have an understanding written sentences and paragraphs in work related documents.
- It is required to be able to adjust actions in relation to others' actions.
- It is required to be aware of others' reactions and understanding why they react as they do.
- It is required to be able to communicate effectively in writing as appropriate for the needs of the audience.
- It is required to have the ability to read and understand information and ideas presented in writing.
- It is required to have the ability to apply general rules to specific problems to produce answers that make sense.
- It is required to have the ability to tell when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing there is a problem.
- It is preferred to be able to use logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.

- It is preferred to be able to monitor/assess performance of yourself, other individuals, or organizations to make improvements or take corrective action.
- It is preferred to be able to manage one's own time and the time of others.
- It is preferred to have the ability to concentrate on a task over a period of time without being distracted.
- It is preferred to have
- It is typical to work up to 40 hours per week for this position.

#### **EDUCATION AND EXPERIENCE**

- It is required to have a high school diploma or GED for this position.
- It is required to have 1 to 3 years of experience for this position.

Table 14

<b>Job Title:</b>	Sales Clerk		
<b>Job Description</b>	Sell merchandise and compute sales prices, total purchases, receive and process cash or credit payment.		
<b>TASKS, DUTIES AND RESPONSIBILITIES</b>			
<ul style="list-style-type: none"><li>• Frequently prepare sales slips or sales contracts.</li><li>• Frequently maintain knowledge of current sales and promotions, policies regarding payment and exchanges, and security practices.</li><li>• Frequently maintain records related to sales.</li><li>• Frequently work with others in a group or team in this job.</li><li>• Frequently be very exact or highly accurate when performing this job.</li><li>• Occasionally greet customers and ascertain what each customer wants or needs.</li><li>• Occasionally describe merchandise and explain use, operation, and care of merchandise to customers.</li><li>• Occasionally recommend, select, and help locate or obtain merchandise based on customer needs and desires.</li><li>• Occasionally answer questions regarding the company and its merchandise.</li><li>• Occasionally keep up-to-date technically and applying new knowledge to your job.</li><li>• Occasionally analyze information and evaluating results to choose the best solution and solve problems.</li></ul>			
<b>KNOWLEDGE, SKILLS, AND ABILITIES</b>			
<ul style="list-style-type: none"><li>• It is required to have knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.</li><li>• It is required to have knowledge of arithmetic, algebra, geometry, calculus, statistics, and their applications.</li><li>• It is required to be able to give full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.</li><li>• It is required to be able to talk to others to convey information effectively.</li><li>• It is required to be able to actively look for ways to help people.</li></ul>			

- It is required to be able to adjust actions in relation to others' actions.
- It is required to understand written sentences and paragraphs in work related documents.
- It is required to be able to monitor/assess performance of yourself, other individuals, or organizations to make improvements or take corrective action.
- It is preferred to have knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.
- It is preferred to be able to bring others together and try to reconcile differences.
- It is preferred to be able to be aware of others' reactions and understanding why they react as they do.
- It is preferred to have the ability to tell when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing there is a problem.
- It is preferred to be able to use logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.
- It is preferred to the ability to apply general rules to specific problems to produce answers that make sense.
- It is typical to work between 21 and 30 hours per week for this position.

#### **EDUCATION AND EXPERIENCE**

- It is required to have a high school diploma or GED for this position.
- It is not required to have any prior experience for this position.

Table 15

<b>Job Title:</b>	Sales Representative		
<b>Job Description</b>	Sell goods or services door-to-door or on the street or cold contacting		
<b>TASKS, DUTIES, AND RESPONSIBILITIES</b>			
<ul style="list-style-type: none"><li>• Contact new and existing customers to discuss their needs, and to explain how these needs could be met by specific products and services.</li><li>• Answer customers' questions about products, prices, availability, or credit terms.</li><li>• Quote prices, credit terms, or other bid specifications.</li><li>• Emphasize product features based on analyses of customers' needs and on technical knowledge of product capabilities and limitations.</li><li>• Negotiate prices or terms of sales or service agreements.</li><li>• Maintain customer records, using automated systems.</li><li>• Identify prospective customers by using business directories, following leads from existing clients, participating in organizations and clubs, and attending trade shows and conferences.</li><li>• Prepare sales contracts for orders obtained, and submit orders for processing.</li><li>• Select the correct products or assist customers in making product selections, based on customers' needs, product specifications, and applicable regulations.</li><li>• Collaborate with colleagues to exchange information, such as selling strategies or marketing information.</li></ul>			

- Deliver merchandise and collect payment.
- Write and record orders for merchandise or enter orders into computers.
- Explain products or services and prices and demonstrate use of products.
- Contact customers to persuade them to purchase merchandise or services.
- Arrange buying parties and solicit sponsorship of such parties to sell merchandise.
- Answer questions about product features and benefits.
- Circulate among potential customers or travel by foot, truck, automobile, or bicycle to deliver or sell merchandise or services.
- Develop prospect lists.
- Distribute product samples or literature that details products or services.
- Order or purchase supplies.

#### **KNOWLEDGE, SKILLS, AND ABILITIES**

- Knowledge of principles and methods for showing, promoting, and selling products or services. This includes marketing strategy and tactics, product demonstration, sales techniques, and sales control systems.
- Knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.
- Talking to others to convey information effectively.
- Persuading others to change their minds or behavior
- Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.
- Being aware of others' reactions and understanding why they react as they do.
- Bringing others together and trying to reconcile differences.
- Understanding written sentences and paragraphs in work related documents.
- Actively looking for ways to help people.
- Understanding the implications of new information for both current and future problem-solving and decision-making
- Identifying complex problems and reviewing related information to develop and evaluate options and implement solutions.
- Adjusting actions in relation to others' actions.
- The ability to listen to and understand information and ideas presented through spoken words and sentences.
- The ability to speak clearly so others can understand you
- The ability to identify and understand the speech of another person.
- The ability to tell when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing there is a problem.
- The ability to combine pieces of information to form general rules or conclusions (includes finding a relationship among seemingly unrelated events).

#### **EDUCATION AND EXPERIENCE**

- It is required to have at least a high school diploma to fill this position.

- It is not required to have experience for this position.

Table 16

<b>Job Title:</b>	Vice President of Sales		
<b>Job Description</b>	Plan, direct, or coordinate the actual distribution or movement of a product or service to the customer. Coordinate sales distribution by establishing sales territories, quotas, and goals and establish training programs for sales representatives. Analyze sales statistics gathered by staff to determine sales potential and inventory requirements and monitor the preferences of customers.		
<b>TASKS, DUTIES, AND RESPONSIBILITIES</b>			
<ul style="list-style-type: none"><li>• Resolve customer complaints regarding sales and service.</li><li>• Oversee regional and local sales managers and their staffs.</li><li>• Plan and direct staffing, training, and performance evaluations to develop and control sales and service programs.</li><li>• Determine price schedules and discount rates.</li><li>• Review operational records and reports to project sales and determine profitability.</li><li>• Monitor customer preferences to determine focus of sales efforts.</li><li>• Prepare budgets and approve budget expenditures.</li><li>• Confer or consult with department heads to plan advertising services and to secure information on equipment and customer specifications.</li><li>• Direct and coordinate activities involving sales of manufactured products, services, commodities, real estate or other subjects of sale.</li><li>• Confer with potential customers regarding equipment needs and advise customers on types of equipment to purchase.</li></ul>			
<b>KNOWLEDGE, SKILLS, AND ABILITIES</b>			
<ul style="list-style-type: none"><li>• Knowledge of principles and methods for showing, promoting, and selling products or services. This includes marketing strategy and tactics, product demonstration, sales techniques, and sales control systems.</li><li>• Knowledge of business and management principles involved in strategic planning, resource allocation, human resources modeling, leadership technique, production methods, and coordination of people and resources.</li><li>• Knowledge of principles and procedures for personnel recruitment, selection, training, compensation and benefits, labor relations and negotiation, and personnel information systems.</li><li>• Knowledge of principles and methods for curriculum and training design, teaching and instruction for individuals and groups, and the measurement of training effects.</li><li>• Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.</li><li>• Being aware of others' reactions and understanding why they react as they do.</li><li>• Adjusting actions in relation to others' actions.</li><li>• Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.</li></ul>			

- Monitoring/Assessing performance of yourself, other individuals, or organizations to make improvements or take corrective action.
- Considering the relative costs and benefits of potential actions to choose the most appropriate one.
- Motivating, developing, and directing people as they work, identifying the best people for the job.
- The ability to communicate information and ideas in speaking so others will understand.
- The ability to communicate information and ideas in writing so others will understand.
- The ability to tell when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing there is a problem.
- The ability to apply general rules to specific problems to produce answers that make sense.

#### **EDUCATION AND EXPERIENCE**

- It is required to have at least a Bachelor's Degree for this position.
- It is required to have 3 to 5 years of experience for this position.

Table 17

<b>Job Title:</b>	Chief Executive Officer		
<b>Job Description</b>	Determine and formulate policies and provide overall direction of companies or private and public sector organizations within guidelines set up by a board of directors or similar governing body. Plan, direct, or coordinate operational activities at the highest level of management with the help of subordinate executives and staff managers.		
<b>TASKS, DUTIES, AND RESPONSIBILITIES</b>			
<ul style="list-style-type: none"><li>• Frequently confer with board members, organization officials, or staff members to discuss issues, coordinate activities, or resolve problems.</li><li>• Frequently analyze operations to evaluate performance of a company or its staff in meeting objectives or to determine areas of potential cost reduction, program improvement, or policy change.</li><li>• Frequently direct, plan, or implement policies, objectives, or activities of organizations or businesses to ensure continuing operations, to maximize returns on investments, or to increase productivity.</li><li>• Frequently prepare budgets for approval, including those for funding or implementation of programs.</li><li>• Frequently direct or coordinate activities of businesses or departments concerned with production, pricing, sales, or distribution of products.</li><li>• Frequently negotiate or approve contracts or agreements with suppliers, distributors, federal or state agencies, or other organizational entities.</li><li>• Frequently review reports submitted by staff members to recommend approval or to suggest changes.</li><li>• Frequently give full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at</li></ul>			

inappropriate times.

- Frequently use logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.
- Frequently understand written sentences and paragraphs in work related documents.
- Frequently talk to others to convey information effectively.
- Frequently motivate, develop, and direct people as they work, identifying the best people for the job.
- Frequently manage one's own time and the time of others.
- Frequently determine how money will be spent to get the work done, and accounting for these expenditures.
- Frequently provide information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person.
- Frequently observe, receive, and otherwise obtaining information from all relevant sources.
- Frequently analyze information and evaluate results to choose the best solution and solve problems.
- Frequently communicate with people outside the organization, representing the organization to customers, the public, government, and other external sources. This information can be exchanged in person, in writing, or by telephone or e-mail.
- Frequently establish long-range objectives and specify the strategies and actions to achieve them.
- Frequently develop constructive and cooperative working relationships with others, and maintain them over time.
- Frequently encourage and build mutual trust, respect, and cooperation among team members.
- Frequently convince others to buy merchandise/goods or to otherwise change their minds or actions.
- Frequently make decisions that impact the results of co-workers, clients or the company.
- Frequently make decisions that affect other people, the financial resources, and/or the image and reputation of the organization.
- Frequently be exact or highly accurate.
- Frequently be in contact with others (face-to-face, by telephone, or otherwise) in order to perform work.
- Occasionally identify the underlying principles, reasons, or facts of information by breaking down information or data into separate parts.
- Occasionally handle complaints, settle disputes, and resolve grievances and conflicts, or otherwise negotiate with others.
- Occasionally adjust actions in relation to others' actions.
- Occasionally appoint department heads or managers and assign or delegate responsibilities to them.
- Occasionally direct human resources activities, including the approval of human resource plans or activities, the selection of directors or other high-level staff, or establishment or organization of major departments.
- Occasionally identifying complex problems and reviewing related information to develop and evaluate options and implement solutions.



- Occasionally considering the relative costs and benefits of potential actions to choose the most appropriate one.

### **KNOWLEDGE, SKILLS, AND ABILITIES**

- It is required to have knowledge of business and management principles involved in strategic planning, resource allocation, human resources modeling, leadership technique, production methods, and coordination of people and resources.
- It is required to have knowledge of economic and accounting principles and practices, the financial markets, banking and the analysis and reporting of financial data.
- It is required to have knowledge of laws, legal codes, court procedures, precedents, government regulations, executive orders, agency rules, and the democratic political process.
- It is required to have knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.
- It is required to have Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.
- It is required to have knowledge of principles and procedures for personnel recruitment, selection, training, compensation and benefits, labor relations and negotiation, and personnel information systems.
- It is required to have knowledge of principles and procedures for personnel recruitment, selection, training, compensation and benefits, labor relations and negotiation, and personnel information systems.
- It is required to have knowledge of arithmetic, algebra, geometry, calculus, statistics, and their applications.
- It is required to have the ability to listen to and understand information and ideas presented through spoken words and sentences.
- It is required to have the ability to read and understand information and ideas presented in writing.
- It is required to have the ability to tell when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing there is a problem.
- It is required to have the ability to speak clearly so others can understand you.
- It is required to have the ability to combine pieces of information to form general rules or conclusions (includes finding a relationship among seemingly unrelated events).
- It is required to have the ability to apply general rules to specific problems to produce answers that make sense.
- It is required to have the ability to come up with a number of ideas about a topic (the number of ideas is important, not their quality, correctness, or creativity).
- Typically it is required to work more than 40 hours per week for this position.
- It is preferred to have knowledge of principles and methods for showing, promoting, and selling products or services. This includes marketing strategy and tactics, product demonstration, sales techniques, and sales control systems.

### **EDUCATION AND EXPERIENCE**

- It is required to have at least a Bachelor's Degree to fulfill this position.
- It is required to have 10 or more years of experience for this position.

Table 18

Job Title:	Chief Financial Officer		
Job Description	Determine and formulate policies and provide overall direction of companies or private and public sector organizations within guidelines set up by a board of directors or similar governing body within the financial realm. Plan, direct, or coordinate operational activities at the highest level of management with the help of subordinate executives and staff managers in the financial realm.		
TASKS, DUTIES, AND RESPONSIBILITIES			
<ul style="list-style-type: none"><li>• Frequently direct or coordinate an organization's financial or budget activities to fund operations, maximize investments, or increase efficiency.</li><li>• Frequently confer with board members, organization officials, or staff members to discuss issues, coordinate activities, or resolve problems.</li><li>• Frequently analyze operations to evaluate performance of a company or its staff in meeting objectives or to determine areas of potential cost reduction, program improvement, or policy change.</li><li>• Frequently direct, plan, or implement policies, objectives, or activities of organizations or businesses to ensure continuing operations, to maximize returns on investments, or to increase productivity.</li><li>• Frequently prepare budgets for approval, including those for funding or implementation of programs.</li><li>• Frequently direct or coordinate activities of businesses or departments concerned with production, pricing, sales, or distribution of products.</li><li>• Frequently negotiate or approve contracts or agreements with suppliers, distributors, federal or state agencies, or other organizational entities.</li><li>• Frequently review reports submitted by staff members to recommend approval or to suggest changes.</li><li>• Frequently give full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.</li><li>• Frequently use logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.</li><li>• Frequently understand written sentences and paragraphs in work related documents.</li><li>• Frequently talk to others to convey information effectively.</li><li>• Frequently motivate, develop, and direct people as they work, identifying the best people for the job.</li><li>• Frequently manage one's own time and the time of others.</li><li>• Frequently determine how money will be spent to get the work done, and accounting for these expenditures.</li><li>• Frequently provide information to supervisors, co-workers, and subordinates by</li></ul>			

telephone, in written form, e-mail, or in person.

- Frequently observe, receive, and otherwise obtaining information from all relevant sources.
- Frequently analyze information and evaluate results to choose the best solution and solve problems.
- Frequently communicate with people outside the organization, representing the organization to customers, the public, government, and other external sources. This information can be exchanged in person, in writing, or by telephone or e-mail.
- Frequently establish long-range objectives and specify the strategies and actions to achieve them.
- Frequently develop constructive and cooperative working relationships with others, and maintain them over time.
- Frequently encourage and build mutual trust, respect, and cooperation among team members.
- Frequently convince others to buy merchandise/goods or to otherwise change their minds or actions.
- Frequently make decisions that impact the results of co-workers, clients or the company.
- Frequently make decisions that affect other people, the financial resources, and/or the image and reputation of the organization.
- Frequently be exact or highly accurate.
- Frequently be in contact with others (face-to-face, by telephone, or otherwise) in order to perform work.
- Occasionally identify the underlying principles, reasons, or facts of information by breaking down information or data into separate parts.
- Occasionally handle complaints, settle disputes, and resolve grievances and conflicts, or otherwise negotiate with others.
- Occasionally adjust actions in relation to others' actions.
- Occasionally appoint department heads or managers and assign or delegate responsibilities to them.
- Occasionally direct human resources activities, including the approval of human resource plans or activities, the selection of directors or other high-level staff, or establishment or organization of major departments.
- Occasionally identifying complex problems and reviewing related information to develop and evaluate options and implement solutions.
- Occasionally considering the relative costs and benefits of potential actions to choose the most appropriate one.

#### **KNOWLEDGE, SKILLS, AND ABILITIES**

- It is required to have knowledge of business and management principles involved in strategic planning, resource allocation, human resources modeling, leadership technique, production methods, and coordination of people and resources.
- It is required to have knowledge of economic and accounting principles and practices, the financial markets, banking and the analysis and reporting of financial data.
- It is required to have knowledge of laws, legal codes, court procedures, precedents,

government regulations, executive orders, agency rules, and the democratic political process.

- It is required to have knowledge of principles and processes for providing customer and personal services. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction.
- It is required to have Knowledge of the structure and content of the English language including the meaning and spelling of words, rules of composition, and grammar.
- It is required to have knowledge of principles and procedures for personnel recruitment, selection, training, compensation and benefits, labor relations and negotiation, and personnel information systems.
- It is required to have knowledge of principles and procedures for personnel recruitment, selection, training, compensation and benefits, labor relations and negotiation, and personnel information systems.
- It is required to have knowledge of arithmetic, algebra, geometry, calculus, statistics, and their applications.
- It is required to have the ability to listen to and understand information and ideas presented through spoken words and sentences.
- It is required to have the ability to read and understand information and ideas presented in writing.
- It is required to have the ability to tell when something is wrong or is likely to go wrong. It does not involve solving the problem, only recognizing there is a problem.
- It is required to have the ability to speak clearly so others can understand you.
- It is required to have the ability to combine pieces of information to form general rules or conclusions (includes finding a relationship among seemingly unrelated events).
- It is required to have the ability to apply general rules to specific problems to produce answers that make sense.
- It is required to have the ability to come up with a number of ideas about a topic (the number of ideas is important, not their quality, correctness, or creativity).
- Typically it is required to work more than 40 hours per week for this position.
- It is preferred to have knowledge of principles and methods for showing, promoting, and selling products or services. This includes marketing strategy and tactics, product demonstration, sales techniques, and sales control systems.

#### **EDUCATION AND EXPERIENCE**

- It is required to have at least a Bachelor's Degree to fulfill this position.
- It is required to have 10 or more years of experience for this position.