SPHRi MODULE FOUR
MEASUREMENT

Senior Professional in Human Resources – International (SPHRi)

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Part One: Measurement Methods

1. Data Collection

There are data and the human resources (HR) department has always been the custodian of employee data. The type of data collected, where the data are stored, how the data are used, and the type of system used for these purposes has changed over time, but the need to collect information relating to hiring, promoting, firing, engage, and retain employees has not changed. Essentially, collecting data means putting your design for collecting information into operation. You've decided how you're going to get information – whether by direct observation, interviews, surveys, experiments and testing, or other methods – and now you and/or other observers have to implement your plan. There's a bit more to collecting data, however. If you are conducting observations, for example, you'll have to define what you're observing and arrange to make observations at the right times, so you actually observe what you need to. You'll have to record the observations in appropriate ways and organize them so they're optimally useful.

Recording and organizing data may take different forms, depending on the kind of information you're collecting. The way you collect your data should relate to how you're planning to analyze and use it. Regardless of what method you decide to use, recording should be done concurrent with data collection if possible, or soon afterwards, so that nothing gets lost and memory doesn't fade.

Data Collection	Primary Data	Interviews
		Surveys
		Observation
	Secondary Data	Published Data
		Personnel records
		Electronic Data
		Government Records
		Public Sector Records
		Internet

Data Collection

Source: Anderson, V. (2013). Research Methods in Human Resource Management (3 edition). London: UK: Chartered Institute of Personnel and Development (CIPD).

All projects undertaken as part of an HR program of study require the collection and analysis of data. This may be secondary data (which has already been generated for some other purpose) as well as primary data (which you will gather to answer your research questions).

1.1. Primary Data

Primary data are data that were previously unknown and which have been obtained directly by the researcher for a particular research project. Primary information is primary data to which meaning has been added; in other words, the data have been analyzed, inferences have been drawn from them and, thereby, meaning has been added.

1.1.1. Interview

The interview has been called ‘a conversation with a purpose’, and more formally ‘a purposeful discussion between two or more people’. You can collect data using structured, semi-structured or unstructured interviews.

A **structured interview** is one in which the interviewer simply reads out a set of closed questions in a particular order and notes the interviewee’s responses. Structured interviews are sometimes referred to as standardized interviews.

When you are stopped in the street by researchers carrying clipboards, they usually want to ask you questions about last evening’s TV, a product, a recent event or a proposed action, such as the building of a new road that would affect the immediate locality. In the clipboard, they have a list of set questions, and if you agree to answer them, they will simply read them out from the list and note your responses. Everyone who cooperates is asked the same set of questions, which means that the interviewer is conducting a structured interview. The process of carrying out the structured interview sounds simple, but the whole business of interviewing involves considerable skill. Just as when you are constructing a questionnaire, care has to be taken over formulating the questions and the order in which they are asked. Also, when you are face to face with the respondent, how the questions are asked is also important, including your visible manner and any emphasis you may deliberately or inadvertently place on particular words or phrases in the question. Unlike the distributed questionnaire, therefore, you do have a strong element of control over the situation in which the questions and responses are dealt with. For the same reasons, you would have the same degree of control conducting a series of structured interviews among managers or small group of other key people in an organization.

Normally, in a structured interview, people expect you to take notes. Such notes are normally brief and to the point, and the design of the form on which you have your interview questions listed should also include a space for the responses next to each question. From the table you can see that the notes you are taking are answers to closed questions and, therefore, do not take long to write down.

Semi-structured and unstructured interviews are sometimes referred to as non-standardized interviews. A **semi-structured interview** is one in which the interviewer has a pre-set type and order of questions, but is prepared to add to the number of questions, vary the theme of the interview and the order in which the questions are asked if doing so is of benefit to the research objectives. Unlike the structured, the semi-structured interview does allow the respondent to talk freely, expand upon answers and even change the theme of the interview. That is fine as long as the interviewee (i) does not digress to the extent that they depart from your research subject, and (ii) is contributing to the kind of data you are trying to collect.

An **unstructured interview** is one in which the interviewer starts with a single theme; some questions may be written down, but the whole ambience is one of informality, so that the interviewer may explore the several aspects of a complex issue in depth by asking open questions, which are questions designed to invite explanatory or detailed answers. In some unstructured interviews there is more than one interviewee, depending on the areas you wish to explore and the different expertise that may be required. When you are carrying out an unstructured interview, you are playing the role of moderator or the chair of a meeting, and to elicit any meaningful data from such meetings, you need to develop appropriate skills. The main advantage of unstructured interviews is that they allow you to probe in a greater depth than you can when you are limited to the confines of a set of predetermined questions. Scholars refer to unstructured interviews as in-depth interviews.

The advantages of semi-structured and unstructured interviews are firstly, that you hear different views expressed about the same topic or issue as you progress from one interview to the next. Secondly, when you are summarizing and collating the data you have collected and find something that needs expansion or explanation, you can go back to the interviewee to obtain such clarifications.

The time you spend interviewing people at semi-structured and unstructured interviews is very precious, but it is time wasted if you fail to make accurate records of the data made available to you during the event. It can be difficult to hold a reasonable conversation with someone, let alone control the meeting, if concurrently you are trying to keep abreast of what is being said by writing continuously. Also, if you sit there making copious notes, you will inhibit the free flow of conversation and, indeed, may even lose valuable data that would have come out instead of those embarrassing silences.

It is the foresight and the skill with which you plan the event that determines how smoothly the interviews run. We use the word ‘foresight’ because it is worth taking a little time to think about all of the administrative tasks you can carry out before the event. You know the theme/s you are going to be handling and the questions to which you need answers. One approach to handling this is to set up a document that will enable you to make a comprehensive record of the event. Do one page for each interviewee and divide it into sections. There is more writing space than the figure indicates since it represents a whole page. Alternatively, you could use a landscape page set-up.

When we use interview approaches, we are mostly concerned with note-taking and vocalized recording of conversations in semi-structured and unstructured interviews. Some people react negatively to the prospect of having their conversation recorded. For ethical reasons and as a common courtesy, you need to obtain their permission to use a recording device, which is something you can do in advance of the interview.

The interviewee should be given some control over the use of the machine. For example, the answers to some of the questions you ask may be politically sensitive, but the interviewee may be prepared to answer your question if the machine is switched off while he or she is speaking.

Obviously, a recorder will hold the most precise and unbiased account of a one-to-one interview, but with several participants, as there are in some unstructured interviews and focus groups, it is sometimes difficult to identify who said what when you are reviewing the interview at a later stage, although you may ask the participants to state their names before they speak. A group of interviewees will normally react more positively to the use of a recorder, but in a one-to-one interview the interviewee's awareness of it may make it difficult to establish a good rapport. One further problem is that the interviewee's awareness of the machine may cause them to divide their attention between you and it, especially at the beginning of the interview.

Depending on the nature and complexity of the subject, interviews can take anything from one to three hours. Key people in organizations, for example, often cannot afford so much time. They may, however, agree to a shorter interview; especially if the subject of you research has excited their interest. It is a good idea to make an estimate before you make contact and add a 10 per cent contingency time allowance so that the prospective interviewee can reserve sufficient time for you. You may not need that extra time, and if you do not, at least it will make you look efficient.

Alternatively, you could organize a **focus group** consisting of just a few people and in which you, the researcher, may loosely lead the meeting. Because of your role, the focus group is, in effect, an unstructured interview because your role is to guide the conversation and keep it to the central theme, or at least to a theme that, when discussed, is likely to produce data that would contribute to your research. Keeping control of the general conversation is a skilled social activity, and researchers vary in their ability to do this effectively. You have to recognize when to allow the conversation to flow and when to steer it towards a new direction. The objective is to make the best possible use of the knowledge and expertise of people in the group. What they say during the conversation may give rise to further questions that you think need to be answered. Always plan the duration of the meeting. Put together a number of questions that you think can be discussed, conclusions reached and useful data obtained. The more complex the questions are, the greater the amount of time the meeting will take.

It is clear from what is said above that the decision about the most appropriate type of interview is a critically important one; in fact, your research may include more than one type. You may, for example, decide to collect both qualitative and quantitative data. When you conduct unstructured interviews, clearly, you are collecting qualitative information, which you glean from the flow of conversation. On the quantitative front, however, you may also use such probing, in-depth interviews to identify the variables you will need in order to design your survey questionnaire or list of questions for a fully structured interview.

Some people use telephone interview to reduce the cost compared with face to face interview. The quality of the data that you can collect on the telephone is determined primarily by your own telephone skills. The point should also be made that cost is also a factor. You may think that you are saving time and money by not travelling, but the likelihood that you will be making the call during business hours is very high, and that, of course, is exactly when the telephone companies charge their highest rates.

1.1.2. Surveys

A survey is a technique in which a sample of prospective respondents is selected from a population. The sample is then studied with a view to drawing inferences from their responses to the statements in a questionnaire, or the questions in a series of interviews. Population is the term we use to describe the main group of people from which a sample is drawn. A population, therefore, may be an organization's workforce, a management group or a group of customers. A sample is a representative cross-section of people drawn from a population so that their responses may be studied. The sizes of the samples and the structures of the surveys are determined by the kind of data that needs to be collected and from whom.

Most people are familiar with questionnaires. We see them being administered for a variety of reasons in many walks of life. TV companies use them to assess their programs and viewing figures; marketing researchers use them to obtain people's opinions of their products and services; and psychologists, who are briefed by the media and political parties, use them to obtain data about trends and habits in voting.

Occasionally, however, we receive questionnaires in the workplace asking our opinions of say, the pension scheme, or the organization's policies on health and safety, pay, holiday entitlement or promotion. The purposes of surveys that are carried out in organizations usually set out to:

- Identify employees' attitudes towards something
- Elicit employees' opinions of something
- Obtain data about employees' characteristics
- Ask employees about their behavior
- Obtain information about their perceptions of something in particular, such as the cause of a continuing problem.

At first glance, some of these purposes may seem similar, but there are subtle differences which, if ignored, could affect the quality of the data you ultimately collect. An opinion, for example, is an unproven belief or judgement about something such as the effects of mobile telephone masts on people's health, whereas an attitude may be a disposition to act for or against something or a predisposition to respond consistently in a positive or negative way to some person, object or situation. An attitude, however, is not actual behavior, but attitudes do cause people to behave in the way they do. Individual perception is a mental process. It is the process that gives us the ability to make sense of things in the world around us. Truly, these words are used conversationally and different meanings are attributed to them. In scientific terms, however, the true, non-colloquial differences are of paramount importance when we come to construct the question items for a questionnaire or for a series of interviews, since it is the precise wording of the questions that determines the relevance and types of responses we obtain. This brings us back to considering the kind of data we wish to collect. Do you, for example, want people's opinions of some event, object, policy or idea? Or do you want to elicit their attitudes towards it? If you consider the meanings of these words as they are stated above, you should be able to see how they influence the way you formulate your questions.

A frequently used questionnaire in organizations is one that is designed to measure people's attitude towards something. You may, for example, need to find out what the employees think of the design of the work system or the communication style of the managers. There are several techniques for this, one of which is the self report questionnaire in which respondents are asked to report their feelings, beliefs and behavior towards the subject of the survey.

1.1.3. Observation

There are two approaches to collecting primary data through the use of observational methods. The first is structured observation, in which the researcher simply observes and records behavior. The second is participant observation, in which the researcher actually takes part in the behavior being studied.

Unlike the data gathered from an interview, this kind of observation records irrefutable facts about people's behavior. However, structured observation is quite a 'cold' exercise in that it tells us little about the subject's emotions – their reactions to what they have to do and their thoughts and feelings about it. Those being observed are usually aware of what you are doing and, for ethical reasons, they should be told anyway. Exceptionally, when there is no alternative and when the observation subject is sufficiently important to justify it, covert observation takes place. Obviously, this raises ethical issues. Researchers do not normally set out to deceive people. On the other hand, the transparency of the observation creates a dilemma because in certain circumstances the probability of collecting accurate data is reduced markedly since those being observed seldom behave in the way they would normally. Undoubtedly, behavior departs from the norm when people are aware that they are being watched. Another form of deception takes place when as part of an ostensibly overt observation exercise, such as participant observation, the behavior that is being observed by the researcher may be outside the limits of his or her stated intentions.

Two problems associated with observational techniques are response bias and observer bias. Response bias occurs when someone who knows that he or she is under observation behaves in ways that are designed to provide the researcher with information that the person observed thinks the observer seeks (in an effort to 'help' science). If this goes undetected, it may contaminate the data.

Observer bias occurs when two observers place different interpretation on some item of behavior. Obviously, no two interpretations are ever exactly the same, but when they are markedly different, we have to either reach a compromise about the meaning of the behavior, or simply agree to differ. It could, of course, be behavior that is normally repeated, in which case both observers could be on hand to observe it concurrently and then reach an agreement. While observational methods are used less frequently than surveys and interviews, they are always worth considering for your total research strategy, depending, of course, on the nature of what you are researching. It is worth repeating that the reliability and validity of data is increased by the evidential corroboration and cross-checking that the use of more than one method of data collection provides.

1.2. Secondary Data

Secondary data in research consists of several sources. Sometimes primary data cannot be obtained or it becomes difficult to obtain primary data, in such cases the researcher is bound to use secondary data. The reliability, authenticity and generalizability of secondary data is less as compared to primary data as it has been already manipulated and used by other people. Obtaining primary data requires more human and non-human resources like time, money and energy, therefore in some studies researchers consider secondary data much better and feasible.

1.2.1. Published Data

Published Data is the most basic secondary source of information for data collection. Published data can be obtained from various sources like books, magazines, newspapers, journals and periodicals etc. Published data is the most reliable secondary source of information. The validity of published data is greater than unpublished data.

The majority of published records can be obtained from libraries and archives. Libraries carry a vast variety of books, journals and periodicals. You can use this information as a reference in your thesis, dissertation or other research articles. Periodicals and journals provide up to date information and they are also available in libraries. In social sciences and humanities newspapers can also be used to get references. Newspaper is an excellent source of data collection historical research. Some record cannot be obtained from any other source except newspaper as it does not exist in books and journals. Old newspapers record can be obtained from the archives. In published data books are easier to use as data are arranged in order in books while newspapers are difficult to use because in newspapers there is no list of contents or bibliography.

1.2.2. Personnel Records

Personnel records can also be very useful in research if data is unavailable in published from other sources. Some personal sources like letters and diaries are invaluable assets. Letters and diaries can have a personal bias as they are written by human beings and they contain personal judgement. The chances of bias should be eliminated before using these sources for references.

1.2.3. Electronic Data

Electronic Data like movies, documentaries and television programs can also be sued for recording data in secondary research. In the social sciences and humanities it can be a good source of information.

1.2.4. Government Records

Government Records are available in the form of government surveys, tax records, census data and other statistical reports. They are easily available and widely used in research studies.

1.2.5. Public Sector Records

Public Sector Records are available in Non-Governmental Organizations (NGOs) as well as some other public sector organization keeps records. These records can be published or unpublished but they carry information that cannot be obtained from other sources.

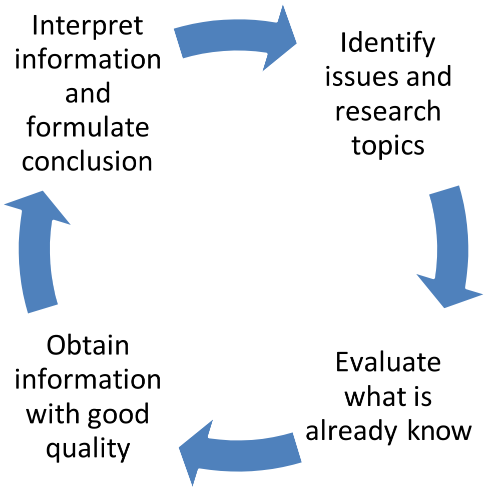
1.2.6. Internet

Internet in today's world is the fastest growing source of information. The internet has become mature and today you can get any information from the internet. Most of the books are available on the internet in e-book format. You can get information while staying at home. The information can be obtained faster than you can obtain from any other source. On the internet you can get e-books, e-journals, e-periodicals and e-magazines. The internet is a multiple source of information as all of the above mentioned sources can be obtained from the internet. Most recent and most up to date information can be obtained from the internet as it won't be available in books and other forms. Getting information from the internet is inexpensive as compared to other sources. You can get membership of different periodicals, sometimes this membership is free otherwise you have to pay a small amount of money.

1.3. Research through Data

With a situation like this, the more sources of information you can draw on, and the more variety of types of information you can gather (opinions as well as sales brochures; statistics as well as recommendations), the more confident you are likely to feel in your ultimate decision. Merely booking a holiday because it is cheap, it was suggested by an acquaintance you do not know that well and it was the first option you stumbled across are less likely to result in a happy time. To enhance the fact-finding process you must first be clear what it is you are really looking for. Then it is necessary to find out what is already known about the destination and the travel process. Next you search for further information, obtaining as many different types of data as possible. Finally, you make sense of all the information and make your decision.

The decision making process involves the systematic enquiry into an issue to increase knowledge and underpin effective decision-making. The activities it would involve are, however, indicative of the components of any research process in the following figure.



Research Process

Source: Anderson, V. (2013). Research Methods in Human Resource Management (Third edition). London: UK: Chartered Institute of Personnel and Development (CIPD).

Often research is represented as a series of discrete and linear stages. However, the reality of organizational research is that each stage is often interrelated with the others and experiences in later stages often lead to reconsideration of earlier ones.

2. Research Methods

The ability to undertake good-quality research which leads to relevant practical outcomes and contributes to the knowledge-base of the HR profession is an important skill. Qualified professionals should be able to research relevant topics and write reports that can persuade key stakeholders in the organization to change or adopt a particular policy and practice. There are many different ideas about what 'research' actually is. A useful and simple definition to start with is: finding out things in a systematic way to increase knowledge. Research is a key function of higher education and informs much of what goes on in work organizations. As a result, universities and colleges as well as professional bodies are increasingly requiring elements of research-based or enquiry-based learning at all levels of study.

HRM involves practical application of up-to-date understanding in the context of 'real world' organizations. Reliable knowledge built on accurate information is needed. To undertake effective HRM, it is important that good-quality information underpins decisions and informs the actions of those involved in the employment relationship, such as trade unions, individual employees, outsourced service providers and professional organizations

There are two kinds of data we are apt to be working with, although not all evaluations will necessarily include both.

- Quantitative data refer to the information that is collected as, or can be translated into, numbers, which can then be displayed and analyzed mathematically.

- Qualitative data are collected as descriptions, anecdotes, opinions, quotes, interpretations, etc., and are generally either not able to be reduced to numbers, or are considered more valuable or informative if left as narratives.

Qualitative information for human resources includes surveys, interviews, opinions and academic literature, while quantitative information includes statistics and numerical calculations relating to human resources research. Human resources researchers collect qualitative information and analyze it using quantitative information. Gathering qualitative data from employees and managers provides "real-time" information about employee morale, team building and reveals problem areas within an organization, its management, and employee performance and training. Quantitative information includes statistical tables, mathematical charts, salary benchmarking and reports breaking down survey and interview results by percentages of participants.

2.1. Qualitative Research

Qualitative information is only as useful as the information is accurate. Variables can impact sources of qualitative information. An employee placed under disciplinary procedures is less likely to provide an objective opinion of her boss than an employee receiving a promotion. Human resources researchers must select research samples large enough for determining trends in the information sought; the results from a larger sample population are more likely to accurately reflect general opinions and trends. Researchers gathering qualitative information design surveys and interviews for ensuring objective administration of the research questions. Researchers may need to provide anonymity and uniform interview and survey protocols for ensuring objective results. Qualitative research can take many forms. Typical are:

2.1.1. Observation

One of the most common methods for qualitative data collection, participant observation is also one of the most demanding. It requires that the researcher become a participant in the culture or context being observed. The literature on participant observation discusses how to enter the context, the role of the researcher as a participant, the collection and storage of field notes, and the analysis of field data. Participant observation often requires months or years of intensive work because the researcher needs to become accepted as a natural part of the culture in order to assure that the observations are of the natural phenomenon.

Direct observation is distinguished from participant observation in a number of ways. First, a direct observer doesn't typically try to become a participant in the context. However, the direct observer does strive to be as unobtrusive as possible so as not to bias the observations. Second, direct observation suggests a more detached perspective. The researcher is watching rather than taking part. Consequently, technology can be a useful part of direct observation. For instance, one can videotape the phenomenon or observe from behind one-way mirrors. Third, direct observation tends to be more focused than participant observation. The researcher is observing certain sampled situations or people rather than trying to become immersed in the entire context. Finally, direct observation tends not to take as long as participant observation. For instance, one might observe child-mother interactions under specific circumstances in a laboratory setting from behind a one-way mirror, looking especially for the nonverbal cues being used.

2.1.2. Interviewing

Unstructured interviewing involves direct interaction between the researcher and a respondent or group. It differs from traditional structured interviewing in several important ways. First, although the researcher may have some initial guiding questions or core concepts to ask about, there is no formal structured instrument or protocol. Second, the interviewer is free to move the conversation in any direction of interest that may come up. Consequently, unstructured interviewing is particularly useful for exploring a topic broadly. However, there is a price for this lack of structure. Because each interview tends to be unique with no predetermined set of questions asked of all respondents, it is usually more difficult to analyze unstructured interview data, especially when synthesizing across respondents.

2.1.3. Case Studies

A case study is an intensive study of a specific individual or specific context. For instance, Freud developed case studies of several individuals as the basis for the theory of psychoanalysis and Piaget did case studies of children to study developmental phases. There is no single way to conduct a case study, and a combination of methods (e.g., unstructured interviewing, direct observation) can be used.

2.1.4. Focus group

A highly effective tool in understanding the needs and concerns of your employees is the use of employee focus groups. When facilitated properly, focus groups will give you significant insights into what your employees are thinking.

A focus group discussion is a good way to gather together people from similar backgrounds or experiences to discuss a specific topic of interest. The group of participants is guided by a moderator (or group facilitator) who introduces topics for discussion and helps the group to participate in a lively and natural discussion amongst themselves.

Unlike the one-way flow of information in a one-on-one interview, focus groups generate data through the give and take of group discussions. Listening as people share and compare their different points of view provides a wealth of information - not just about what they think, but why they think the way they do. The ideal size for a focus group is generally between six and twelve people. This size group encourages participants to contribute their ideas.

Questions should be open-ended so that there are many possible replies. Short-answer questions, such as those that can be answered "yes" or "no" should be avoided. It is also important to avoid leading questions that suggest the opinions the moderator hopes to receive.

Ideally, the moderator places the question (or issue or topic) before the group. They then discuss it among themselves - talking to each other, asking each other questions about what they hear, and generally reacting to each other. It is a totally different dynamic from an interview.

2.1.5. Content Analysis

Content analysis refers to any technique for making inferences by objectively and systematically identifying specified characteristics of messages. Content analysis can be a powerful tool for examining trends and patterns in documents. For instance, what constitutes effective HR management? And what are current themes of, and approaches to, HR management? Content analysis seeks to answer these questions, first, by examining popular management books published in the world in the last decade, and then, in light of environmental changes, by discussing emerging human resource management implications.

Additionally, content analysis provides an empirical basis for monitoring shifts in public opinion. Data collected from the HR projects in the late 1990s can be objectively compared to data collected at some point in the future to determine if technology changes related to standards-based reform have manifested themselves in HR practices.

Qualitative Methods

Source: Bryman, A. & Bell, E. (2015). Business Research Methods (4th Edition). Oxford, UK: Oxford University Press.

2.2. Quantitative Research

Human resources researchers tabulate survey and interview results using statistics and mathematics. Quantitative information can be checked for statistical and mathematical accuracy, but it does not account for variables including interviewees "having a bad day," personal conflicts between employees and subordinates and subjective judgments made by survey respondents or interviewees. Respondents' morale, fear of retribution for their answers or workplace politics can influence the outcome of research and cannot be measured using quantitative analysis. Statistical calculations are used for determining a margin of error in measuring qualitative information, which provides allowances for inaccurate or untruthful responses. Quantitative information can be skewed by incorrect mathematical and statistical tabulations. There are several of quantitative research methods as follow:

2.1.1. **Regression analysis** includes any techniques for modeling and analyzing several variables, when the focus is on the relationship between a dependent variable and one or more independent variables. That always is shown on a scatter diagram.

2.1.2. **Analysis of variance** (ANOVA) is a collection of statistical models, and their associated procedures, in which the observed variance in a particular variable is partitioned into components attributable to different sources of variation.

2.1.3. **Factor analysis** is a statistical method used to describe variability among observed variables in terms of a potentially lower number of unobserved variables called factors.

2.1.4. **Cluster analysis** or clustering is the assignment of a set of observations into subsets (called clusters) so that observations in the same cluster are similar in some sense.

2.1.5. **Structural equation modeling** (SEM) is a statistical technique for testing and estimating causal relations using a combination of statistical data and qualitative causal assumptions.

2.1.6. **Operations research** (OR, also referred to as decision science or management science) encompasses a wide range of problem-solving techniques and methods applied in the pursuit of improved decision-making and efficiency.

2.3. Combining Qualitative and Quantitative Research

Human resources departments conduct research for determining salary benchmarks for their industries, researching the cost and coverage of health benefits, and for surveying employees and management. Quantitative and qualitative information are helpful for identifying trends and areas for improvement within a workplace. Human resources recruiters and retention specialists gather and tabulate such information for maintaining competitive compensation and benefits. Information gathered is tabulated, analyzed and presented to executive management with recommendations. Human resources researchers also use quantitative information for determining hiring trends and developing demographics for locating job candidates. Surveying employees assists human resources with identifying morale issues, improving employee performance, and reorganizing departments and work flow for improving efficiency.

Comparing Qualitative and Quantitative Research

Qualitative Research	Research Aspect	Quantitative Research
Discover Ideas, with General Research Objects	Common Purpose	Test Hypotheses or Specific Research Questions
Observe and Interpret	Approach	Measure and Test
Unstructured. Free Form	Data Collection Approach	Structured Response Categories Provided
Research is intimately involved. Resultsare subjective	Researcher Independence	Researcher uninvolved Observer. Results are Objective
Small samples-Often in Natural setting	Samples	Large samples to Produce Generalizable Results [Results that Apply to Other Situations

Source: Othman, S. (2014). Benefits of Combining Qualitative & Quantitative Methods. Available on shayaaresearch.blogspot.tw.

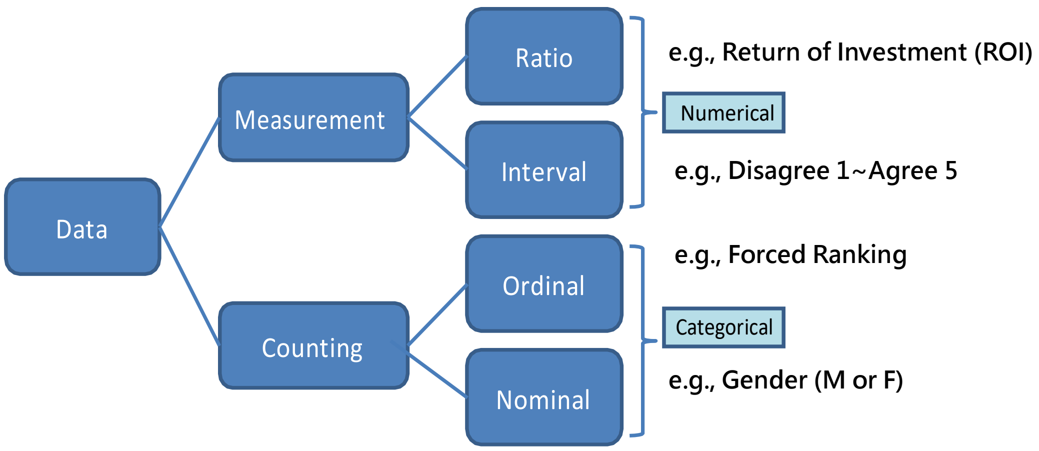
While the Quantitative design strives to control for bias so that facts can be understood in an objective way, the Qualitative approach is striving to understand the perspective of the program stakeholders, looking to firsthand experience to provide meaningful data. The accumulation of facts and causes of behavior are addressed by quantitative methodology as the qualitative methodology addresses concerns with the changing and dynamic nature of reality. Quantitative research designs strive to identify and isolate specific variables within the context (seeking correlation, relationships, causality) of the study as the Qualitative design focuses on a holistic view of what is being studied (via documents, case histories, observations and interviews). Quantitative data is collected under controlled conditions in order to rule out the possibility that variables other than the one under study can account for the relationships identified while the Qualitative data are collected within the context of their natural occurrence.

Both Quantitative and Qualitative research designs seek reliable and valid results. Data that are consistent or stable as indicated by the researcher's ability to replicate the findings is of major concern in the Quantitative arena while validity of the Qualitative findings are paramount so that data are representative of a true and full picture of constructs under investigation. By combining methods, advantages of each methodology complements the other making a stronger research design with resulting more valid and reliable findings. The inadequacies of individual methods are minimized and more threats to Internal Validity are realized and addressed.

Human resources departments use qualitative and quantitative information for investigating employee performance problems and personnel issues. Qualitative data can assist human resources departments with identifying personnel problems and sources of employee morale problems. Quantitative information including attendance records and production reports assist with identifying individual and team problems within an organization. Workplace safety officers evaluate quantitative data reporting employee injuries and equipment failures for identifying and reducing potential for workplace injuries. Qualitative and quantitative information used together provide a full range of information for the topic or circumstances being researched. Qualitative information provides multiple points of view about a research topic, while quantitative data provides direct and objective information.

3. Measurement Scale

It is important, in data analysis, to know about the different scales of measurement. There are four levels of data measurement. Ranked from top to bottom in order of complexity and information content these are:



Measurement Scale

Source: Aamodt, M.G., Surrette, M.A., & Cohen, D. (2015). Understanding Statistics: A Guide for I/O Psychologists and Human Resource Professionals (5th Edition). Belmont, CA: Wadsworth Publishing.

3.1. Nominal Data

The nominal scale of measurement only satisfies the identity property of measurement. Values assigned to variables represent a descriptive category, but have no inherent numerical value with respect to magnitude.

Gender is an example of a variable that is measured on a nominal scale. Individuals may be classified as "male" or "female", but neither value represents more or less "gender" than the other. Religion and political affiliation are other examples of variables that are normally measured on a nominal scale.

Nominal variables allow for only qualitative classification. That is, they can be measured only in terms of whether the individual items belong to some distinctively different categories, but we cannot quantify or even rank order those categories. For example, all we can say is that two individuals are different in terms of variable A (e.g., they are of different race), but we cannot say which one "has more" of the quality represented by the variable.

As you can see nominal measurement is simply concerned with sorting observations into categories. Because the single property of nominal data is classification it tells us nothing about differences in degree or amount. Numbers assigned to categories (as identification codes) have no numeric value (we cannot add, subtract, divide or multiply nominal data) and any ordering of categories is arbitrary. This is the most primitive form of measurement. The presence vs. absence of something is a form of nominal measurement (“do you smoke?” YES, NO). Although it is considered a form of measurement the collection of nominal data is more easily thought of as a sorting method.

- Properties: classification
- Observations reflect: differences in kind
- Examples: gender, ethnic background, political affiliation, handedness, major in college

3.2. Ordinal Data

The ordinal scale has the property of both identity and magnitude. Each value on the ordinal scale has a unique meaning, and it has an ordered relationship to every other value on the scale.

An example of an ordinal scale in action would be the results of a horse race, reported as "win", "place", and "show". We know the rank order in which horses finished the race. The horse that won finished ahead of the horse that placed, and the horse that placed finished ahead of the horse that showed. However, we cannot tell from this ordinal scale whether it was a close race or whether the winning horse won by a mile.

Ordinal variables allow us to rank order the items we measure in terms of which has less and which has more of the quality represented by the variable, but still they do not allow us to say "how much more." Also, this very distinction between nominal, ordinal, and interval scales itself represents a good example of an ordinal variable.

For example, if Jerry Seinfeld is ranked 1st for funniness, and David Letterman is ranked 15th we have no way of knowing how much funnier Seinfeld is than Letterman. We cannot assume that he is fifteen times funnier. He may be more or less than fifteen times funnier. But we do know that he is more funny than Letterman, and more funny than the comedians ranked 2nd through 14th places as well. We know about order but we have no information about the size of the interval between points.

- Properties: classification, order
- Observations reflect: differences in degree
- Examples: rankings, academic letter grade, stages in development

3.3. Interval Data

The interval scale of measurement has the properties of identity, magnitude, and equal intervals.

A perfect example of an interval scale is the Fahrenheit scale to measure temperature. The scale is made up of equal temperature units, so that the difference between 40 and 50 degrees Fahrenheit is equal to the difference between 50 and 60 degrees Fahrenheit.

With an interval scale, you know not only whether different values are bigger or smaller, you also know how much bigger or smaller they are. For example, suppose it is 60 degrees Fahrenheit on Monday and 70 degrees on Tuesday. You know not only that it was hotter on Tuesday, you also know that it was 10 degrees hotter.

Interval variables allow us not only to rank order the items that are measured, but also to quantify and compare the sizes of differences between them.

Essentially, interval data are ordinal, but they have an extra property - the ability to meaningfully add and subtract measurements. In interval-scaled data, the gaps between the numbers are comparable, unlike with ordinal data. Any interval has the same meaning regardless of its location on the scale. "X is five inches longer than y" has meaning regardless of the values of X and Y. However, ratios are meaningless on an interval scale because an interval scale has no true zero. Temperature scales are an example of this, so are decibel scales. Zero degrees Fahrenheit does not mean the total absence of temperature. Zero decibels does not mean there is no sound. Furthermore, if it is 80 degrees outside today and it was only 40 degrees outside yesterday we cannot say that today is twice as hot as yesterday. Similarly a sound level of 80 dB is not twice as loud as a sound level of 40 dB. In short, if the data can be ordered and the arithmetic difference is meaningful, then the data are at least interval data.

- Properties: classification, order, equal intervals
- Observations reflect: measurable differences in amount
- Examples: IQ scores, degrees of temperature, magnitude estimation scales

Note: Ratings on a continuous 1-10 or 1-100 scale are a form of magnitude estimation and they approximate the properties of interval data. We can use the statistical tools appropriate for interval data to analyze these data because there is an underlying assumption that values given on such a rating scale are considered to have equal intervals.

3.4. Ratio Data

Ratio variables are very similar to interval variables; in addition to all the properties of interval variables, they feature an identifiable absolute zero point, thus, they allow for statements such as x is two times more than y. The ratio scale of measurement satisfies all four of the properties of measurement: identity, magnitude, equal intervals, and a minimum value of zero.

The weight of an object would be an example of a ratio scale. Each value on the weight scale has a unique meaning, weights can be rank ordered, units along the weight scale are equal to one another, and the scale has a minimum value of zero.

Ratio data are the highest form of data measurement and the form we are most familiar with. For ratio data both differences and ratios are interpretable. Examples of ratio scale data are number of computers you own, weight, height, a bank balance, number of people watching a movie, goals scored by Brazil in the World Cup, etc. Ratio data look a lot like interval data. However, the zero point has a special meaning in ratio-scaled data: it indicates the absence of whatever property is being measured. Ratio data always have the flavor of counting: when you measure the amount of money that you have, you are counting up coins and bills. When you are measuring your height, you are counting the number of inches off the ground to the top of your head. Both ratio and interval data make use of a wide range of statistical analysis tools.

- Properties: classification, order, equal intervals, true zero
- Observations reflect: measurable differences in total amount
- Examples: weight, income, family size, number of cows in a field

Shifts to more complex levels of measurement are accompanied by more informative observations that in turn permit a wider variety of interpretations and statistical analyses. Even though the numerical measurement of some non-physical characteristics (e.g., measures of intelligence, measures of satisfaction on a continuous rating scale etc.) may fail to attain the true characteristics of interval or ratio data, they are often treated as approximating at least interval data.

4. Essentials of Statistics

When you get a big set of data there are all sorts of ways to mathematically describe the data. The term "average" is used a lot with data sets. Mean, median, and mode are all types of averages. Together with range, they help describe the data.

4.1. Mean

When people say "average" they usually are talking about the mean. You can figure out the mean by adding up all the numbers in the data and then dividing by the number of numbers. For example, if you have 12 numbers, you add them up and divide by 12. This would give you the mean of the data. For example, if you have three people, one of whom earns $1, one of whom earns $2, and one of whom earns $1000, the mean salary is $334.33 ($1003/3).

4.2. Median

The median is the middle number of the data set. It is exactly like it sounds. To figure out the median you put all the numbers in order (highest to lowest or lowest to highest) and then pick the middle number. If there is an odd number of data points, then you will have just one middle number. If there is an even number of data points, then you need to pick the two middle numbers, add them together, and divide by two. That number will be your median.

For example, the median salary rate is the salary that is exactly in the middle if EVERY person is placed in rank according to salary (let's say lowest to highest salary). In the example above, you'd have: person A $1; person B $2; person C $1000

The median salary is $2. Half the people have salaries above the median and half the people have salaries below the median. The median is useful when salaries are unequal. For example, when someone is paid a lot more than others, like in this example, the mean is strongly influenced. When you say the average is $334, it looks like everyone is doing OK. The median is more reflective (so, you know, for example, that half the people do worse than $2) in this case.

For salary data, the median salary (or net compensation) is the salary "in the middle." That is, half of the employees earned below this level.

4.3. Mode

The mode is the number that appears the most. There are a few tricks to remember about mode:

If there are two numbers that appear most often (and the same number of times) then the data has two modes. This is called bimodal. If there are more than 2 then the data would be called multimodal. If all the numbers appear the same number of times, then the data set has no modes.

Imagine that you live in a small town where most of the people are employed by a factory and earn minimum wage. One of the factory owners lives in the town and his salary is in the millions of dollars. If you use a measure like the average to try to compare salaries in the town as a whole, the owner's income would severely throw off the numbers. This is where the measure of mode can be useful in the real world. It tells you what most of the pieces of data are doing within a set of information.

4.4. Range

Range is the difference between the lowest number and the highest number. Take, for example, math test scores. Let's say your best score all year was a 100 and your worst was a 75. Then the rest of the scores don't matter for range. The range is 100-75=25. The range is 25.

For example, the wages for Pharmacists in the United States are generous, with average pay above six figures ($107K) per year. Total cash earnings of Pharmacists range from $83K on the low end to $133K on the high end. Thus, the pay range is $50K ($133K-$83K).

4.5. Percentile

A percentile is best described as a comparison score. It’s a common term in all kinds of testing of data, but many will be most familiar with percentiles as they relate to personality assessment or salary survey. If you scores at the 75th percentile (P75) on the IQ test, you did "as well or better than" 75% of the ones taking the test (norm group).

4.6. Quartiles

Quartiles are values that divide a set of data into four equal parts. For example, the owner of a super market recorded the number of customers who came into his store each hour in a day. The results were 12, 8, 10, 7, 15, 3, 6, 7, 12, 8, and 9. The ascending order of the data is 3, 6, 7, 7, 8, 8, 9, 10, 12, 12, 15. The lower quartile is 7, the median (second quartile) is 8, and the upper quartile is 12.

4.7. Probability

Probability is the process of quantifying the likelihood of a future event. The probability of an event varies from 0 to 1, with 0 meaning the event definitely will not occur, and 1 meaning the event is certain. Thus, the sum of the probabilities for all possible values for a random variable must equal 1.

Four terms deal with probability: certainty (all the facts surrounding a decision are known exactly, and each alternative is associated with only one possible outcome), uncertainty (the probabilities of the possible outcomes are unknown and must be subjectively determined), risk (the probabilities of the possible outcomes are known and can be mathematically stated), and states of nature (the set of possible outcomes of a future event).

Types of probability: Two events are mutually exclusive if they cannot occur simultaneously. Two events are independent if the occurrence of one has no effect on the probability of the other. The conditional probability of two events is the probability that one will occur given that the other has already occurred. The joint probability for two events is the probability that both will occur.

4.8. Statistical Significance

The statistical significance of a result is the probability that the observed relationship (e.g., between variables) or a difference (e.g., between means) in a sample occurred by pure chance ("luck of the draw"), and that in the population from which the sample was drawn, no such relationship or differences exist. Statistical significance of a result tells us something about the degree to which the result is "true" (in the sense of being "representative of the population").

Typically, in many sciences, results that yield ($p <= .05$) are considered borderline statistically significant, but remember that this level of significance still involves a pretty high probability of error (5%). Results that are significant at the $p<=.01$ level are commonly considered statistically significant. But remember that these classifications represent nothing else but arbitrary conventions that are only informally based on general research experience.

The more analyses you perform on a data set, the more results will meet "by chance" the conventional significance level. Thus, if a relation is large, then it can be found to be significant even in a small sample, whereas the smaller the relation between variables, the larger the sample size that is necessary to prove it significant.

4.9. Standard Deviation (SD)

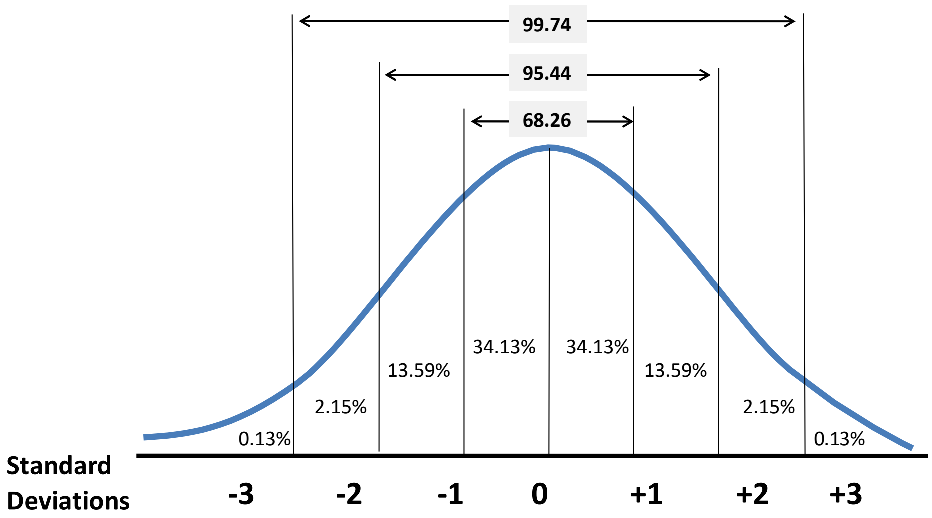
The standard deviation (SD) is a measure of variability (it is not a measure of central tendency). Conceptually it is best viewed as the 'average distance that individual data points are from the mean.' Data sets that are highly clustered around the mean have lower standard deviations than data sets that are spread out.

4.10. Normal Distribution

Normal Distribution-also known as a Guasian distribution, the normal distribution follows the shape of a bell curve. That is to say that results cluster around a mean and then fan out into symmetrical tails on either side. In the case of individual performance, an normal distribution would assume that there would be a small number of non-performers and a small number of high performers, while the majority of individuals would be average performers, clustered around the mean.

Performers not conforming to the normal distribution would be considered errors or outliers and excluded from analysis or forced to fit the distribution (e.g., "grading on a curve").

Normal Distribution and Standard Deviations (SD)



Source: Aamodt, M.G., Surrette, M.A., & Cohen, D. (2015). Understanding Statistics: A Guide for I/O Psychologists and Human Resource Professionals (5th Edition). Belmont, CA: Wadsworth Publishing.

In statistics, the so-called 68–95–99.7 rule is a shorthand used to remember the percentage of values that lie within a band around the mean in a normal distribution with a width of one, two and three standard deviations, respectively; more accurately, 68.27%, 95.45% and 99.73% of the values lie within one, two and three standard deviations of the mean, respectively. In mathematical notation, these facts can be expressed as follows, where x is an observation from a normally distributed random variable, μ is the mean of the distribution, and σ is its standard deviation:

In the empirical sciences the so-called three-sigma rule of thumb expresses a conventional heuristic that "nearly all" values are taken to lie within three standard deviations of the mean, i.e. that it is empirically useful to treat 99.7% probability as "near certainty". The usefulness of this heuristic of course depends significantly on the question under consideration, and there are other conventions, e.g. in the social sciences a result may be considered "significant" if its confidence level is of the order of a two-sigma effect (95%), while in particle physics, there is a convention of a five-sigma effect (99.99994% confidence) being required to qualify as a "discovery".

The "three sigma rule of thumb" is related to a result also known as the three-sigma rule, which states that even for non-normally distributed variables, at least 98% of cases should fall within properly-calculated three-sigma intervals.

Normal distributions have long been used as a model for simplifying complex theories related to scientific disciplines (e.g., laws of thermos dynamics,) economics (e.g., stock pricing), human traits (e.g., height or intelligence), among others. Perhaps most evident in the study of performance and appraisal, we can see how both the design of studies and the statistical analysis used to measure performance yield to the assumptions of a normal distribution.

5. Quantitative Methods

5.1. Regression Analysis

Regression analysis, also called least-squares analysis, is the process of deriving the linear equation that describes the relationship between two variables with a nonzero coefficient of correlation. Simple regression is used when there is one independent variable. The simple regression equation is, obviously, the algebraic formula for a straight line: $y = a + bx$. Regression analysis is one of the most important statistical techniques for business applications. It's a statistical methodology that helps estimate the strength and direction of the relationship between two or more variables. The analyst may use regression analysis to determine the actual relationship between these variables by looking at a corporation's sales and profits over the past several years. The regression results show whether this relationship is valid.

5.1.1. Correlation Coefficient

How well does your regression equation truly represent your set of data? One of the ways to determine the answer to this question is to exam the correlation coefficient and the coefficient of determination. A correlation coefficient expresses the degree of linear relationship between two sets of scores. A positive correlation exists when high values on one measure (e.g., a job knowledge test) are associated with high scores on another measure (e.g., overall ratings of job performance). A negative correlation exists when high scores on one measure are associated with low scores on another measure. The range of possible correlation coefficients (R) is from +1 (a perfect positive correlation coefficient) to -1 (a perfect negative correlation coefficient). The complete absence of correlation between two variables is 0.

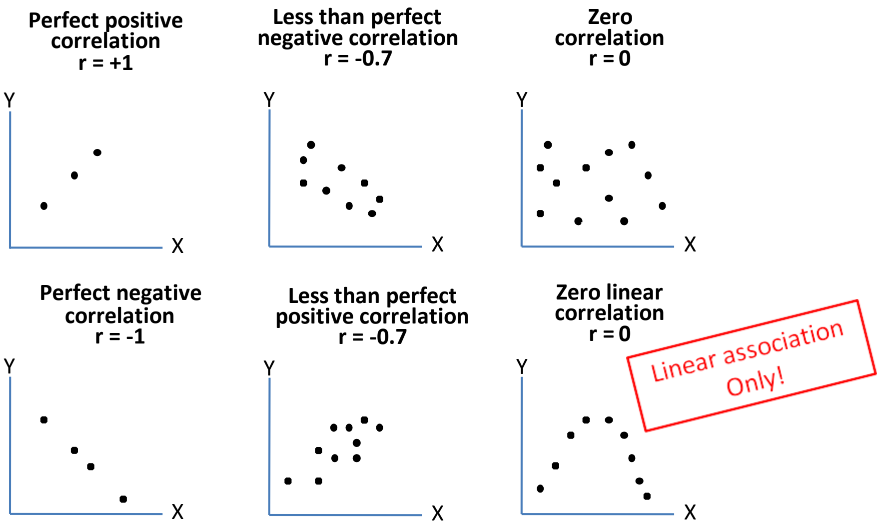
5.1.2. Correlation Determination

The coefficient of determination is commonly known as R-square (R^2) that is useful because it gives the proportion of the variance (fluctuation) of one variable that is predictable from the other variable. It is a measure that allows us to determine how certain one can be in making predictions from a certain model/graph. The coefficient of determination is the ratio of the explained variation to the total variation. The coefficient of determination is such that $0 < R^2 < 1$, and denotes the strength of the linear association between x and y.

For example, we would like to test the relationship HR competencies (x) and HR performance (y). If the coefficient of determination is (R = 0.89), it indicates that HR competencies can explain HR performance with 89%.

5.1.3. Regression Model

On a graph of the variables, each x value is plotted on the x-axis (horizontal line), and each y value is plotted on the y-axis (vertical line). Each x value and its related y value make up the coordinates of each point. After all the points have been plotted on a graph, the result is known as a scatter diagram.



Regression Analysis

Source: Aamodt, M.G., Surrette, M.A., & Cohen, D. (2015). Understanding Statistics: A Guide for I/O Psychologists and Human Resource Professionals (5th Edition). Belmont, CA: Wadsworth Publishing.

In statistics, the correlation coefficient r measures the strength and direction of a linear relationship between two variables on a scatter plot. The value of r is always between +1 and –1. To interpret its value, see which of the following values your correlation r is closest to:

- Exactly –1. A perfect downhill (negative) linear relationship
- – 0.70. A strong downhill (negative) linear relationship
- – 0.50. A moderate downhill (negative) relationship
- – 0.30. A weak downhill (negative) linear relationship

- No linear relationship
- +0.30. A weak uphill (positive) linear relationship
- +0.50. A moderate uphill (positive) relationship
- +0.70. A strong uphill (positive) linear relationship
- Exactly +1. A perfect uphill (positive) linear relationship

If the scatter plot doesn't indicate there's at least somewhat of a linear relationship, the correlation doesn't mean much. Why measure the amount of linear relationship if there isn't enough of one to speak of? However, you can take the idea of no linear relationship two ways: 1) If no relationship at all exists, calculating the correlation doesn't make sense because correlation only applies to linear relationships; and 2) If a strong relationship exists but it's not linear, the correlation may be misleading, because in some cases a strong curved relationship exists. That's why it's critical to examine the scatter plot first.

Many HR people make the mistake of thinking that a correlation of –1 is a bad thing, indicating no relationship. Just the opposite is true! A correlation of –1 means the data are lined up in a perfect straight line, the strongest negative linear relationship you can get. The "–" (minus) sign just happens to indicate a negative relationship, a downhill line.

How close is close enough to –1 or +1 to indicate a strong enough linear relationship? Most statisticians like to see correlations beyond at least +0.5 or –0.5 before getting too excited about them. Don't expect a correlation to always be 0.99 however; remember, these are real data, and real data aren't perfect.

Regression analysis is widely used for prediction and forecasting. Regression is also used to understand which among the independent variables (x) are related to the dependent variable (y), and to explore the forms of these relationships. In restricted circumstances, regression analysis can be used to infer causal relationships between the independent and dependent variables. So, correlation tells you if a relationship exists, regression tells you which variables have the most impact on the dependent variable. So, in an example, we would like to look at engagement data to find out what variables have the MOST impact on employee engagement for a particular company. As these variables can be different from company to company it is important to know what drives engagement so you can keep doing the right things.

5.2. Learning curve analysis

Learning curve analysis reflects the increased rate at which people perform tasks as they gain experience. The time required to perform a given task becomes progressively shorter during the early stages of production. The curve is usually expressed as a percentage of reduced time to complete a task for each doubling of cumulative production. The most common percentage used in practice is 80%. Two methods of applying learning curve analysis are in common use:

- The cumulative average-time learning model projects the reduction in the cumulative average time it takes to complete a certain number of tasks. The time spent on the most recent unit is treated as if it were the average for all units so far.

- The incremental unit-time learning model projects the reduction in the incremental time it takes to complete the last task. The time spent on all units so far is accumulated and the average taken.

5.3. Time series analysis

Time series analysis projects future trends based on past experience (for this reason, it is also called trend analysis). Time series/trend analysis encompasses three main techniques:

- Simple moving average is appropriate when, for instance, the demand for a product is relatively stable and not subject to seasonal variations. The data points are summed and divided by the number of time periods. This process is repeated for successive groups of time periods.
- Weighted moving average allows a firm to give each data point a weight indicating its relative importance in determining the outcome.
- Exponential smoothing is a widespread technique for making projections because it requires less data be kept on hand than the moving average methods.

5.4. Linear Programming

Linear programming is a technique used to optimize a linear function subject to certain constraints. The objective of linear programming is to choose the best solution from a potentially infinite number of possibilities. Applied to business, linear programming is a way of maximizing revenue or profit, or minimizing cost, given limited resources.

5.5. Network analysis

Network analysis techniques are aids in the management of large-scale projects with many interrelated activities. Also called critical path scheduling, network analysis depicts the totality of a project as a set of nodes representing the component tasks, connected by a web of lines representing the required sequence of the tasks.

Gantt charts are the simplest of the project management tools. Each component task of a project is shown as a horizontal bar, the length of which depicts the length of time estimated to complete the task. The major disadvantage of the Gantt chart arises when attempting to use one for a very large-scale project.

The critical path is the longest path in time through the network. It is critical because, if any activity on the critical path takes longer than expected, the entire project will be delayed. Every network has at least one critical path. Some have more than one.

Program Evaluation and Review Technique (PERT) is the most prominent network analysis technique. To perform a PERT analysis:

- Enumerate the tasks making up the project
- Determine the dependencies among the tasks
- Create a network diagram of the interdependencies
- Determine the critical path
- Determine early start and finish times for each task
- Determine late start and finish times for each task
- Determine slack times for each noncritical task. (The slack time for any activity is the amount of time the start of that activity can be delayed without delaying the completion of the project as a whole. Slack time equals late start minus early start.)

Critical activities are those on the critical path. By definition, they have no slack time.

Activity times in PERT analysis can be weighted to include probabilistic estimates. The expected time for each task is the result of this weighting operation. Three time estimates are made: optimistic, most likely, and pessimistic. The traditional weighting is to 1:4:1

Time is not a project manager's only consideration. In practice, managers seek the optimum tradeoff between cost and time in project management. A project can be expedited at the cost of devoting additional resources to it. This is referred to as crashing the network, and involves the calculation of crash costs and crash time for each activity.

Steps in crashing the network:

- Step 1 – Prepare a crash cost figure and crash time for each activity.
- Step 2 – Calculate the cost per unit of time to expedite each activity:
- (change in cost)/(change in time) = (Crash cost - Normal cost)/(Normal time - Crash time)
- Step 3 – Shorten the critical path at the lowest cost.
- Step 4 – Determine the new critical path.
- Step 5 – Repeat steps 3 and 4.

5.6. Decision tree analysis

A decision tree graphically displays the contents of a payoff table. The decision tree depicts the sequence of events over time. Accordingly, the decision tree displays all potential sequences. The decision is under the manager's control. The state of nature is the future event whose outcome the manager is attempting to predict. The payoff is the financial result of the combination of the manager's decision and the actual state of nature.

Expected value is a means of associating a dollar amount with each of the possible outcomes of a probability distribution. The outcome yielding the highest expected value (which may or may not be the most likely one) is the optimal alternative. The expected value of an event is calculated by multiplying the probability of each outcome by its payoff and summing the products. A calculation such as this is often referred to as a payoff table. A criticism of expected value is that it is based on repetitive trials, whereas many business decisions involve only one trial.

Perfect information is the certain knowledge of which state of nature will occur. The expected value of perfect information (EVPI) is the additional expected value that could be obtained if a decision maker knew ahead of time which state of nature would occur. It is the monetary difference between the expected value of a transaction made with perfect information and the best choice without perfect information.

5.7. Sensitivity analysis

Sensitivity analysis reveals how sensitive expected value calculations are to the accuracy of the initial estimates. Sensitivity analysis is thus useful in determining whether expending additional resources to obtain better forecasts is justified. If a change in the probabilities assigned to the various states of nature results in large changes in the expected values, the decision maker is justified in expending more effort to make better predictions about the outcomes.

5.8. Simulation

Simulation is a technique for experimenting with logical and mathematical models using a computer. The technique answers the question of how the results change when the assumptions change. Physical models include automobile mock-ups, airplane models used for wind-tunnel tests, and breadboard models of electronic circuits. Abstract models may be pictorial (architectural plans), verbal (a proposed procedure), or logical-mathematical.

5.9. Monte Carlo technique

The Monte Carlo technique is often used in simulation to generate the individual values for a random variable. A random number generator is used to produce numbers with a uniform probability distribution (equal likelihoods of occurrence). The second step is to transform these numbers into values consistent with the desired distribution. The performance of a quantitative model may be investigated by randomly selecting values for each of the variables in the model (based on the probability distribution of each variable) and then calculating the value of the solution. If this process is performed a large number of times, the distribution of results from the model will be obtained. Monte Carlo simulation is a powerful and flexible way of performing human resource risk analyses.

5.10. Queuing theory

Queuing theory is one technique for workflow analysis. An organization can improve throughput by carefully designing the way inputs arrive at workstations and how they are processed upon arrival.

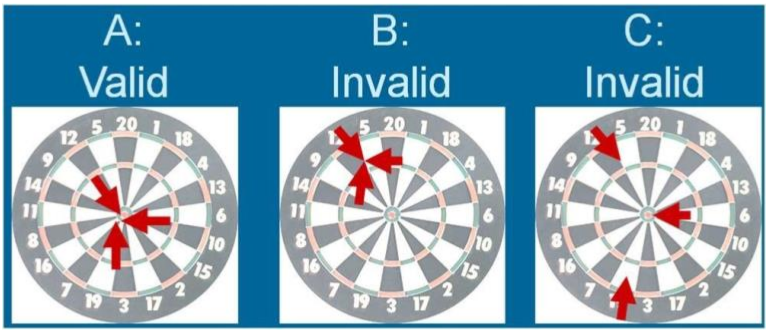
5.11. Markov analysis

Markov analysis is useful in decision problems in which the probability of the occurrence of a future state depends only on the current state. A characteristic of the Markov process is that the initial state matters less and less as time goes on because the process will eventually reach its steady state. Some firms use the Markov analysis technique to track the pattern of employee movements through various jobs and develop a transitional probability matrix for forecasting internal supply by specific categories, such as position and gender.

6. Reliability and Validity

In most cases, using the concepts of reliability and validity, critically examine how confident HR professionals should be in using testing as an effective selection technique. Two of the primary criteria of evaluation in any measurement or observation are:

- Whether we are measuring what we intend to measure.
- Whether the same measurement process yields the same results.



Reliability and Validity

Source: Cascio, W.F. & Aguinis, H. (2010). Applied Psychology in Human Resource Management (7th Edition). Upper Saddle River, New Jersey: Prentice Hall.

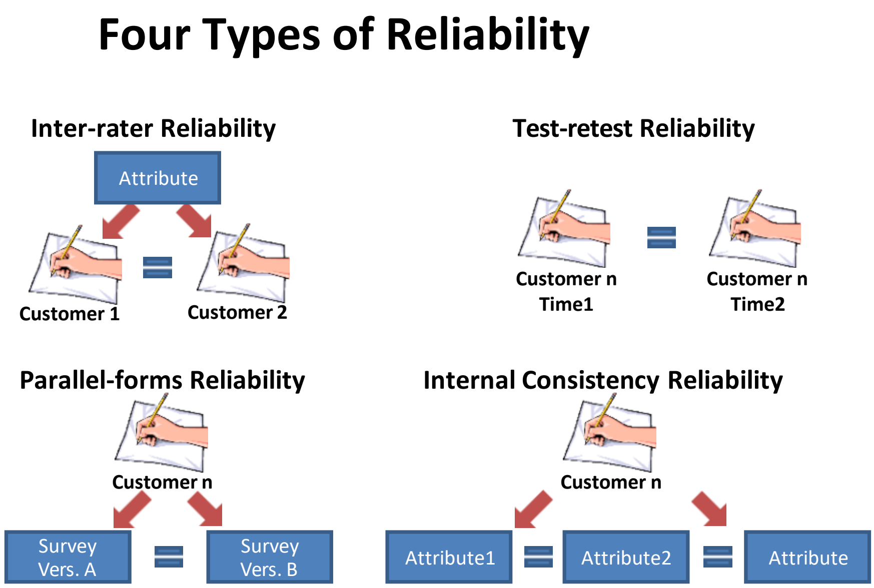
Reliability is concerned with questions of stability and consistency - does the same measurement tool yield stable and consistent results when repeated over time. Think about measurement processes in other contexts - in construction or woodworking, a tape measure is a highly reliable measuring instrument. Say you have a piece of wood that is 2 1/2 feet long. You measure it once with the tape measure - you get a measurement of 2 1/2 feet. Measure it again and you get 2 1/2 feet. Measure it repeatedly and you consistently get a measurement of 2 1/2 feet. The tape measure yields reliable results.

Validity refers to the extent we are measuring what we hope to measure (and what we think we are measuring). To continue with the example of measuring the piece of wood, a tape measure that has been created with accurate spacing for inches, feet, etc. should yield valid results as well. Measuring this piece of wood with a "good" tape measure should produce a correct measurement of the wood's length.

So what is the relationship between validity and reliability? The two do not necessarily go hand-in-hand. At best, we have a measure that has both high validity and high reliability. It yields consistent results in repeated application and it accurately reflects what we hope to represent. It is possible to have a measure that has high reliability but low validity - one that is consistent in getting bad information or consistent in missing the mark. *It is also possible to have one that has low reliability and low validity - inconsistent and not on target. Finally, it is not possible to have a measure that has low reliability and high validity - you can't really get at what you want or what you're interested in if your measure fluctuates wildly.

6.1. Types of Reliability

Reliability refers to a condition where a measurement process yields consistent scores (given an unchanged measured phenomenon) over repeat measurements. Perhaps the most straightforward way to assess reliability is to ensure that they meet the following four criteria of reliability. Measures that are high in reliability should exhibit all four.



Source: Cascio, W.F. & Aguinis, H. (2010). Applied Psychology in Human Resource Management (7th Edition). Upper Saddle River, New Jersey: Prentice Hall.

6.1.1. Inter-rater Reliability

Inter-rater reliability is a measure of reliability used to assess the degree to which different judges or raters agree in their assessment decisions. Inter-rater reliability is useful because human observers will not necessarily interpret answers the same way; raters may disagree as to how well certain responses or material demonstrate knowledge of the construct or skill being assessed. For example, inter-rater reliability might be employed when different judges are evaluating the degree to which art portfolios meet certain standards. Inter-rater reliability is especially useful when judgments can be considered relatively subjective. Thus, the use of this type of reliability would probably be more likely when evaluating artwork as opposed to math problems.

6.1.2. Test-Retest Reliability

Test-retest reliability is a measure of reliability obtained by administering the same test twice over a period of time to a group of individuals. The scores from Time 1 and Time 2 can then be correlated in order to evaluate the test for stability over time. For example, A test designed to assess student learning in psychology could be given to a group of students twice, with the second administration perhaps coming a week after the first. The obtained correlation coefficient would indicate the stability of the scores.

6.1.3. Parallel forms reliability

Parallel forms reliability is a measure of reliability obtained by administering different versions of an assessment tool (both versions must contain items that probe the same construct, skill, knowledge base, etc.) to the same group of individuals. The scores from the two versions can then be correlated in order to evaluate the consistency of results across alternate versions. For example, if you wanted to evaluate the reliability of a critical thinking assessment, you might create a large set of items that all pertain to critical thinking and then randomly split the questions up into two sets, which would represent the parallel forms.

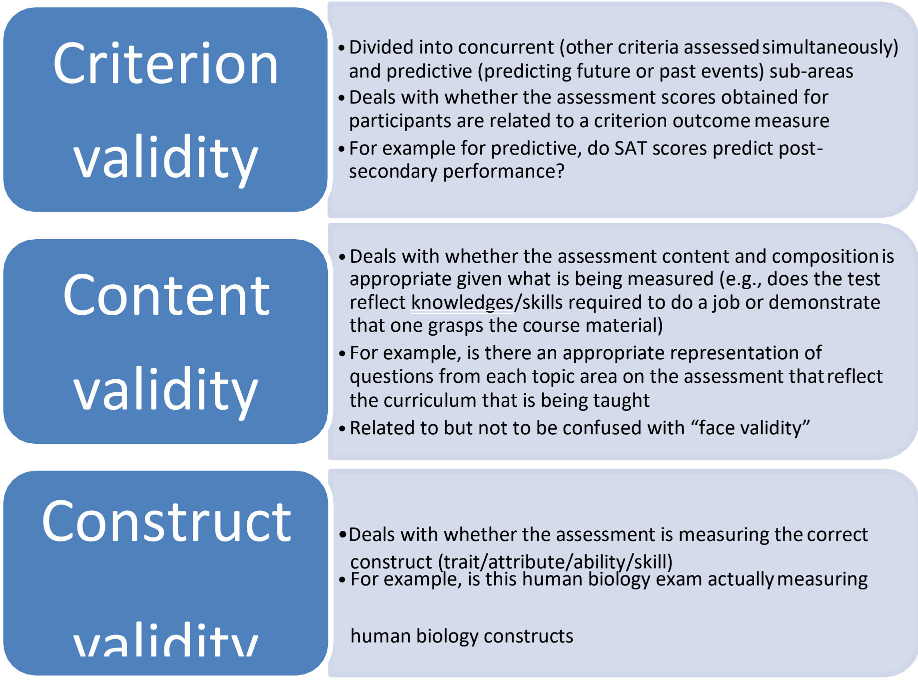
6.1.4. Internal consistency reliability

Internal consistency reliability is a measure of reliability used to evaluate the degree to which different test items that probe the same construct produce similar results. Average inter-item correlation is a subtype of internal consistency reliability. It is obtained by taking all of the items on a test that probe the same construct (e.g., reading comprehension), determining the correlation coefficient for each pair of items, and finally taking the average of all of these correlation coefficients. This final step yields the average inter-item correlation.

Split-half reliability is another subtype of internal consistency reliability. The process of obtaining split-half reliability is begun by "splitting in half" all items of a test that are intended to probe the same area of knowledge (e.g., World War II) in order to form two "sets" of items. The entire test is administered to a group of individuals, the total score for each "set" is computed, and finally the split-half reliability is obtained by determining the correlation between the two total "set" scores.

6.2. Types of Validity

Validity is defined as "The degree to which evidence and theory support the interpretations of test scores entailed by proposed uses of tests." Now here is something you may have heard before: "In order for an assessment to be valid it must be reliable." What does this mean? Well, as we learned, test score reliability refers to how consistently an assessment measures the same thing. One of the criteria to make the statement, "Yes this assessment is valid," is that the assessment must have acceptable test reliability, such as high Cronbach's Alpha test reliability index values. Other criteria for making the statement, "Yes this assessment is valid," is to show evidence for criterion related validity, content related validity, and construct related validity.



Types of Validity

Source: Cascio, W.F. & Aguinis, H. (2010). Applied Psychology in Human Resource Management (7th Edition). Upper Saddle River, New Jersey: Prentice Hall.

6.2.1. Criterion-related Validity

Criterion-related validity empirically assesses how well a predictor measure forecasts a criterion measure. Usually, predictor measures are scores on one or more selection "tests" (e.g., a score from an interview or a score to reflect the amount of experience), and criteria measures represent job performance (e.g., dollar sales per year or supervisory ratings of performance). Two types of criterion-related validation strategies are concurrent validation and predictive validation.

- Concurrent validity evaluates the relationship between a predictor and a criterion for all participants in the study at the same time.
- Predictive validity is determined by measuring an existing group of employees on a predictor and then later gathering their criterion measures.

6.2.2. Content Validity

The content validity is assessed by overview of the items by trained individuals and/or by the individuals from the target population. In order to demonstrate the content validity of a selection procedure, for example, the behaviors demonstrated in the selection should be a representative sample of the behaviors of the job.

6.2.3. Construct Validity

The construct validity measures how well the instrument performs in practice from the standpoint of the specialists who use it. For example, does a reading comprehension test reliably measure how well people can read and understand what they read?

It is important to note that “face validity” is a matter of appearances. Face validity concerns the extent to which an instrument ‘looks like’ it measures what it is intended to measure. Face validity is not considered evidence of the actual validity of a test. It can, however, add a useful dimension to a selection test. Selection tests that “look” valid have a tendency to be viewed more seriously by job applicants and other outside observers.

7. Design of Experiment

Imagine that a HR professional is interested in how a training program has an effect on employee performance. By using an experimental design, the HR professional can evaluate the training effect. In an experiment, we deliberately manipulate one or more process variables (or factors) in order to observe the effect the changes have on one or more response variables. The design of experiments (DOE) is an efficient procedure for planning experiments so that the data obtained can be analyzed to yield valid and objective conclusions.

A well-designed and constructed experiment will be robust under questioning, and will focus criticism on conclusions, rather than potential experimental errors. A sound experimental design should follow the established scientific protocols and generate good statistical data. As an example, experiments on an industrial scale can cost millions of dollars. Repeating the experiment because it had poor control groups, or insufficient samples for a statistical analysis, is not an option. For this reason, the design phase is possibly the most crucial.

With most true experiments, the HR researcher is trying to establish a causal relationship between variables, by manipulating an independent variable to assess the effect upon dependent variables.

7.1. Design of Experiment Basics

In the simplest type of experiment, a researcher is trying to prove that if one event occurs, a certain outcome happens. For example:

"*If employees have training, their performance increases.*"

This is a good hypothesis and, at first glance, appears easily testable. The problem is that, in any solid experimental design, the opposite (contrapositive) should also be true. The design of experiment dictates that, if a certain event does not occur, the tested outcome will not happen, a subtle but crucial factor. The reason for this is that it ensures that there is a genuine causal relationship between the independent and dependent variables. Therefore, the following statement should also be true.

"If employees do not have training, then their performance will not increase."

The first statement is fairly easy to study, relying upon providing employees varying kinds of training, and measuring their performance.

However, it is much more difficult to test the second statement. The only way to test it properly is not to provide the employees training. It is impossible to use the same employees, so a compromise must be reached, and the researcher must use two different groups of employees.

The problem is that it is impossible to have two identical groups, and the Design of Experiment must take this into account. The researcher must understand that there are always going to be differences between the groups. This is why a solid experimental design should have extremely strong controls, and meticulous operationalization. Random groups are the best way of ensuring that the groups are as identical as possible. In the training example, all of the training could attend the same course, but the tested group could be given extra training programs. Randomizing the groups tries to balance out the differences between individuals, and also removes any potential experimental bias.

7.2. Pre and Post Tests

Because HR professionals often want to use evaluation study results as a basis for changing training programs or demonstrating that training does work (as a means to gain additional funding for training from those who control the training budgets), it is important to minimize the threats to validity. On way to improve the internal validity of the study results is to first establish a baseline or pre-training measure of the outcome. Another measure of the outcomes can be taken after training. This is referred to as a post-training measure. A comparison of the post-training and pre-training measure can give an indication of the degree to which trainees have changed as a result of training. The design is often used by companies those want to evaluate a training program but are uncomfortable with excluding certain employees or that only intend to train a small group of employees.

The post-test only design is appropriate when trainees (and the comparison group, if one is used) can be expected to have similar level of knowledge, behavior, or results outcomes (e.g., same number of sales, equal awareness of how to close a sale) prior to training.

7.3. Comparison Groups

Besides pre- and post-training measures of the outcomes, internal validity can be improved by using a control or comparison group. A comparison group refers to a group of employees who participate in the evaluation study but do not attend the training program. Use of a comparison group in training evaluation helps to rule out the possibility that changes found in the outcome measures are due to factors other than training. Use of a comparison group helps to control the effects of history, testing, instrumentation and maturation because both the comparison and training group are treated similarly, receive the same measures, and have the same amount of time to develop.

For example, consider an evaluation of a leadership training program. Leadership behaviors are measures before and after leadership training for both trainees and a comparison group. If the level of leadership behavior improves for the training group from pre-training levels, but remains relatively the same for the comparison group at both pre- and post-training, we can reasonably conclude that the training was responsible for the observed differences in leadership behaviors.

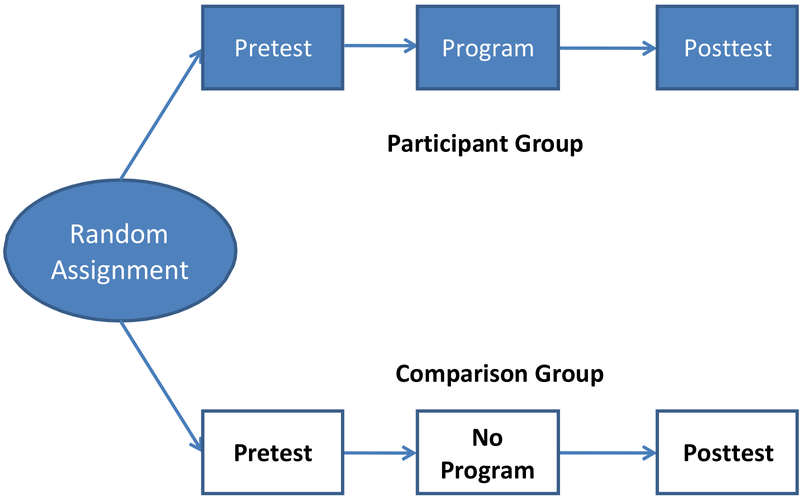
7.4. Random Assignment

Random assignment refers to assigning employees to the training and comparison group on the basis of chance. That is, employees are assigned to the training program without consideration of individual differences or prior experiences. Random assignment helps to insure that trainees are similar in the individual differences such as age, gender, ability, and motivation. Because it is often impossible to identify and measure all of the individual characteristics that might influence the outcome measures, random assignment ensures that these characteristics are equally distributed in the comparison group and the training group. Random assignment helps to reduce the effects of employees dropping out of the study and differences between the training group and comparison group in knowledge, skill, ability, or other characteristics.

Keep in mind that random assignment is often impractical. Organizations want employees assigned to training who need training. Also, they are unwilling to provide a comparison group. One solution to this program is to identify the factors on which the training and comparison groups differ and control for these factors in the analysis of the data. Another method is to determine trainees' characteristics after they are assigned and ensure that the comparison group includes employees with similar characteristics.

7.5. Classic design Vs. Quasi-experimental design

As illustrated in the following diagram, in an ideal 'True Experiment' situation, you would lock all of the employees (or participants) in a laboratory, subjecting them all to the same conditions. The researcher could then ensure that all variables are controlled, except for the independent variable, having training.



*The quasi-experimental design lacks random assignment.

Design of Experiment

Source: Noe, R. (2012). Employee Training & Development (6th Edition). Columbus, OH: McGraw-Hill Education.

The most basic experimental design is called the classic design. It has also been called the "one-factor-at-a-time" design. Subjects are randomly assigned to two equal groups: the control group and the experimental group. Random assignment helps ensure that any differences that emerge are due to the variable being introduced in the experiment (and not due to any characteristics of the group's members).The control group is not exposed to the variable and serves as the base of comparison. The experimental group is exposed to the variable manipulation. Changes in the experimental group are presumed to be the result of the difference in that variable.

Of course, complete perfection in an experiment is almost impossible, because time, resources and unknown factors will always play a significant role. The main point is that the experimental design should strive towards this goal.

The quasi-experimental design lacks random assignment, so the groups may be different prior to the study. The most commonly used quasi-experimental design is the nonequivalent group design, which requires a pre-test and a post-test for a treated (experimental) group and a comparison (control) group. Participants in a classic design are assigned randomly; those in the nonequivalent group design are not.

7.6. Solomon Four-Group

The Solomon four-group design combines the pretest/posttest comparison group, and the posttest-only control group design. In the Solomon four-group design, a training group and a comparison group are measured on the outcomes both before and after training. Another training group and control group are measured only after training. The design serves to reduce the influence of confounding variables and allow the researcher to test whether the pretest itself has an effect on the subjects.

However, a researcher using a Solomon four group design must have the resources and time to use four research groups, not always possible in tightly funded research departments. Most organizations are not going to allow researchers to assign four groups randomly because it will disrupt their normal practice. Thus, a non-random assignment of groups is essential and this undermines the strength of the design.

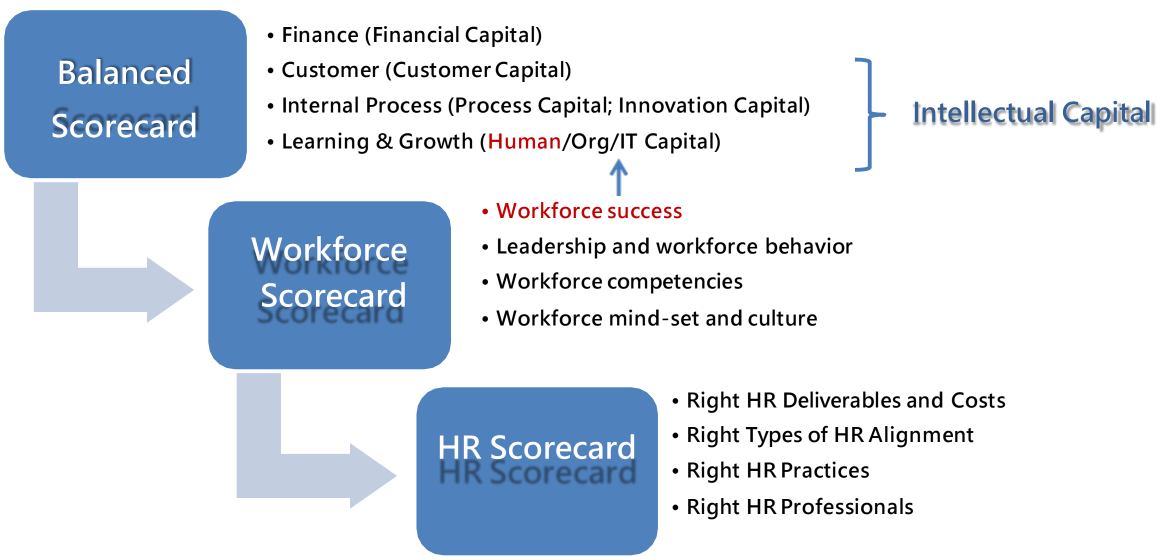
Part Two: Balanced Scorecard

1. HR Measures and Balanced Scorecard

The Balanced Scorecard (BSC) concept was created by Drs. Robert S. Kaplan and David P. Norton and their colleagues at Palladium Group. It is the philosophical underpinning of the Palladium Execution Premium Process™ (XPP). Besides helping organizations articulate strategy in actionable terms, the Balanced Scorecard provides a road map for strategy execution, for mobilizing and aligning executives and employees and making strategy a continual process.

The BSC helps managers define the performance categories that relate to the company's strategy. The managers then translate those categories into metrics and track performance on those metrics. Besides traditional financial and quality measures, companies use employee-performance measures to track their employees' knowledge, skills, and contributions to the company.

The employee-performance aspects of the Balanced Scorecard analyze employee capabilities, satisfaction, retention, and productivity. Companies also track whether employees are motivated (e.g., by tracking the number of suggestions made and implemented by employees) and whether employee performance goals are aligned with company goals.



HR Measures

Source: Huselid, M.A., Becker, B.E., & Beatty, R.W. (2005). The Workforce Scorecard: Managing Human Capital To Execute Strategy. Boston, MA: Harvard Business Review Press.

1.1. Workforce Scorecard and BSC

Most firms develop explicit strategies to optimize resources such as capital, technology, brands, and so on. But few firms are as articulate in their strategies for their most costly resource: the workforce. A clear and compelling workforce strategy is a key element of effective business strategy execution, and the nature of workforce strategy should be highly differentiated and customized for each firm.

The Workforce Scorecard offers a framework that identifies and measures the outcomes, behaviors, competencies, mind-set, and culture required for workforce success and reveals how each dimension impacts the bottom line. The lynchpin of this perspective is an emphasis on looking at the role of "human capital" from the "outside in" (or customer back), not from the "inside out" (starting with the HR function).

Effective workforce management strategies and practices can have a powerful effect on business outcomes, including productivity, profitability, and shareholder value, while firms with highly differentiated product strategies but generic or undifferentiated workforce strategies. Workforce Scorecard offers an approach to developing a workforce strategy as well as a BSC designed to assess the success of corporate and SBU strategies. Thus, workforce Scorecard is used to bridge the gap between the development of a business strategy and its implementation through people.

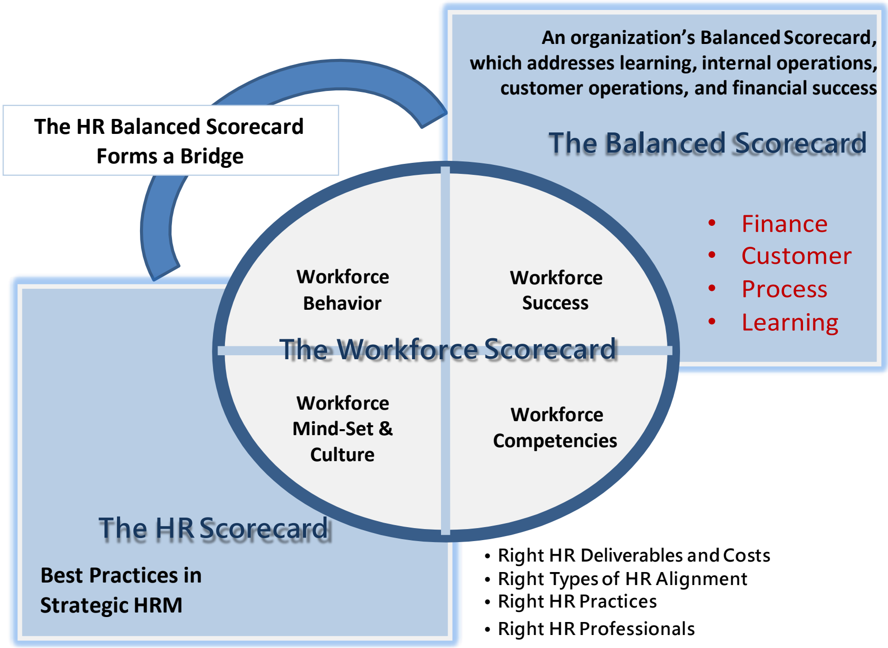
1.2. HR Scorecard and Workforce Scorecard

Delivering results with the workforce scorecard means we need to cascade the firm's strategic goals and objectives into specific HR management system and an HR scorecard that will help ensure the achievement of these goals. But just as we need to know and understand the firm's strategy before we can develop and effective workforce scorecard, we must also understand the firm's workforce strategy before we can build an effective HR scorecard. Therefore, firms need a business strategy, a workforce strategy, and a strategy for the HR function. These strategies are operationalized in the Balanced Scorecard, the Workforce Scorecard, and the HR Scorecard, respectively.

The workforce scorecard highlights the key workforce outcomes that each senior manager needs to focus on providing to the business. The HR scorecard, in contrast, is intended to "drill down" below the elements contained in the workforce scorecard to address the question: What type of HR management system is required to deliver a workforce capable of successful strategy execution. In essence, line and HR leaders share responsibility for the elements contained in the workforce scorecard, while HR managers have primary responsibility for the elements in the HR scorecard.

The HR Scorecard argues that HR measurement systems must be based on a clear understanding of organizational strategy and the capabilities and behaviors of the workforce required implementing that strategy. Thus, an HR Scorecard is a mechanism for describing and measuring how people and people management systems create value in organizations, as well as communicating key organizational objectives to the workforce. The HR Scorecard is built around a series of examples and a process that helps managers to do this work in their own firms – designing an HR architecture that relentlessly emphasizes and reinforces the implementation of the firm's strategy.

As illustrated in the following diagram, the Workforce Scorecard is a key value creating link between the Balanced Scorecard and the HR Scorecard. It does not mean that a firm needs to have all three scorecards in place to benefit from these ideas. For many firms the most important step is simply a change in direction that begins to move them toward the framework including a consideration of HR function, workforce, and business-level outcomes. Adopting a new perspective on workforce success is the foundation of this more formal measurement system, and much progress can be made with the right perspective and a much less formal and comprehensive measurement system. Organizations will often begin by identifying one business outcome (workforce success) and then examining the relationship between that business outcome and a single leading indicator in the Workforce Scorecard (like leadership competencies). This builds a shared enthusiasm for these ideas among line managers and HR professionals and builds the foundation for further elaboration of the framework.



Workforce Scorecard

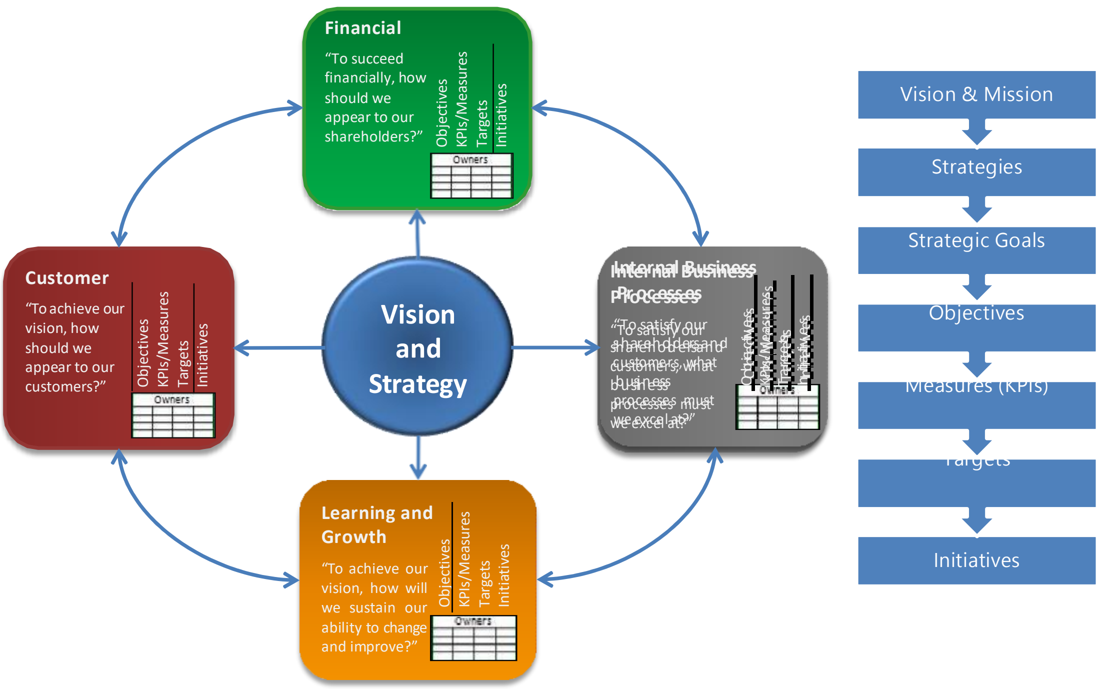
Source: Huselid, M.A., Becker, B.E., & Beatty, R.W. (2005). The Workforce Scorecard: Managing Human Capital To Execute Strategy. Watertown, MA: Harvard Business Review Press.

2. Balanced Scorecard

The BSC concept is that an organization's strategy must be translated into terms that can be understood and acted upon. This is accomplished by translating the corporate "vision & mission" and "strategy" into a set of "strategic objectives" that drive behavior and performance. It also uses the language of measurement to more clearly define the meaning of strategic concepts like quality, customer satisfaction and growth. A scorecard that accurately describes the strategy can serve as the organizing framework for the management system.

A typical balanced scorecard classifies objectives into one of four perspectives from the strategic goals: financial, customer satisfaction, internal business processes, and learning and growth. Each objective is associated with one or more measures that permit the organization to gauge progress toward the objective. Achievement of the objectives in each perspective makes it possible to achieve the objectives in the next higher perspective. Each perspective of the Balanced Scorecard includes objectives, measures of those objectives, target values for those measures, and initiatives, as follows:

- Objectives: the major objectives a company must achieve—for example, profitable growth
- Measures: the observable parameters a company uses to measure its progress toward reaching its objectives. For example, a company might measure its progress toward the objective of profitable growth by growth in net margin.
- Targets: the specific target values for the measures—for example, +2% growth in net margin
- Initiatives: action programs a company initiates to meet its objectives



The Balanced Scorecard

Source: Kaplan, R. & Norton, D. (2001). Building a strategy-focused organization. Ivey Business Journal.

3. Performance Measures

The BSC is a new performance measurement system that adds strategic non-financial performance measures to traditional financial metrics to give managers and executives a more 'balanced' view of organizational performance. The BSC includes financial measures that tell the results of actions already taken. And it complements those financial measures with three sets of operational measures having to do with customer satisfaction, internal processes, and the organization's ability to learn and improve–the activities that drive future financial performance.

The balanced scorecard is a management accounting report that connects the firm's critical success factors to measurements of its performance. Critical success factors (CSFs) are specific, measurable financial and nonfinancial elements of a firm's performance that are vital to its competitive advantage.

Key Performance Indicators, also known as KPI or Key Success Indicators, help an organization define and measure progress toward organizational goals. Key performance indicators are the metrics that may be the part of the balanced scorecard. KPI are quantifiable measurements, agreed to beforehand, that reflect the critical success factors of an organization. Chronologically, KPIs are broken into two different types: leading indicators and lagging indicators.

- Lagging KPIs are historical measurements that look back to determine if success was achieved. Financial measures are lagging indicators: they prove how well the firm has performed.
- Leading KPIs are activity or task-based metrics that are measured early and can be influenced to affect future outcomes. Leading indicators have the predictive power of success. They are measured today to determine if goals will be met tomorrow, and they are measured early and often enough to allow for changes that can impact the predicted outcomes.

3.1. Financial Measures

Financial performance, a lag indicator, provides the ultimate definition of an organization's success. Its strategy describes how a company intends to create sustainable growth in shareholder value. (The strategies of public sector and nonprofit organizations are designed to create sustainable value for citizens and constituents.)

Financial performance measures indicate whether a company's strategy, including its implementation and execution, is contributing to bottom-line improvement.

Financial objectives typically relate to profitability—measured, for example, by economic value added, operating income, or return on investment. Basically, financial strategies are simple: Companies increase shareholder value by (1) selling more and (2) spending less. Thus, a company's financial performance improves through two basic approaches: revenue growth and productivity.

Companies can generate profitable revenue growth by deepening relationships with their existing customers. Companies also generate revenue growth by selling entirely new products. And companies can expand revenue by selling to customers in new segments.

Productivity improvements can also occur in two ways. First, a company can reduce costs by lowering direct and indirect expenses. Second, by using their financial and physical assets more efficiently, companies can reduce the working and fixed capital needed to support a given level of business.

3.2. Customer Measures

Success with targeted customers provides a principal component for improved financial performance. In addition to measuring the lagging outcome indicators of customer success, such as satisfaction, retention, and growth, the customer perspective defines the value proposition for targeted customer segments. Choosing the customer value proposition is the central element of strategy.

The revenue growth strategy requires a specific value proposition that describes how the organization will create differentiated, sustainable value to targeted segments.

Low Total Cost: Offer Products and Services that Are Consistent, Timely, and Low Cost.

Product Leader: Products and Services that Expand Existing Performance Boundaries into the Highly Desirable.

Complete Customer Solutions: Provide the Best Total Solution to Customers.

System Lock-in: High Switching Costs to End-Use Customers and Add Value to Complementors.

3.3. Internal Process Measures

Internal processes create and deliver the value proposition for customers. The performance of internal processes is a leading indicator of subsequent improvements in customer and financial outcomes.

Internal processes accomplish two vital components of strategy: They produce and deliver the value proposition for customers, and they improve processes and reduce costs for the productivity component in the financial perspective.

Operations Management: Producing and delivering products and services to customers.

Customer Management: Establishing and leveraging customer relationships.

Innovation: Developing new products, services, processes and relationships.

Regulatory and Social: Conforming to regulations and societal expectations and building stronger communities.

3.4. Learning and Growth Measures

Intangible assets are the ultimate source of sustainable value creation. Learning and growth objectives describe how the people, technology, and organization climate combine to support the strategy. Improvements in learning and growth measures are lead indicators for internal process, customer, and financial performance. Enhancing and aligning intangible assets leads to improved process performance, which, in turn, drives success for customers and shareholders.

Intangible assets are invaluable to sustainable value creation, but their value derives from their interrelation and cannot be measured independently. Their soft nature makes measurement more subjective than financial measurements of organizational performance. The learning and growth perspective of the BSC shows how an organization can align its intangible assets to its strategy.

There are objectives and measures for three components of intangible assets: human capital, information capital, and organization capital. They must be aligned with the objectives for the internal processes and integrated with each other so there are synergies among them. Three targeted approaches are strategic job families, the strategic IT portfolio, and the organization change agenda.

- Human capital: The availability of skills, talent, and know-how required to support the strategy.
- Information capital: The availability of information systems, networks, and infrastructure required to support the strategy.
- Organization capital: The ability of the organization to mobilize and sustain the process of change required to execute the strategy.

The key to creating this alignment is granularity—that is, to move beyond generalities such as “develop our people” or “live our core values” and focus on specific capabilities and attributes required by the critical internal processes of the strategy. The balanced scorecard strategy map enables executives to pinpoint the specific human, information, and organization capital required by the strategy.

3.4.1. Human Capital Readiness

Human Capital refers as the summation of knowledge, skills, innovativeness and capabilities of a firm’s employees to reach its target. Human capital has two determinants—employees’ capabilities and their commitment. Human capital is entrenched in individuals and not organizations, and therefore human capital would evaporate as employees leave the firm.

Identify strategic job families: All jobs are important to the organization but some jobs have a much greater impact on the strategy than others.

Build the competency profile: One way to do this is to interview those who best understand the job requirements of a job family and create a competency profile detailing the knowledge, skills and values required by successful occupants in a position. Use the profile when recruiting, hiring, training and developing people for that position.

Assess human capital readiness: Drawing from approaches ranging from self-assessments to 360- degree feedback, evaluate an individual’s performance and potential in these critical job families. Provide individuals with a clear understanding of their objectives, meaningful competency and performance feedback, and a practical approach for future personal development. If a strategy map reveals the need for strategic job families that don't exist yet, create new job profiles based on the competencies required for the new processes.

The human capital development program: Under the strategic job family model, the organization concentrates HR programs on the critical few jobs that are pivotal to the strategy. This focus creates speed of action and efficient spending, but this approach implies that many jobs are nonstrategic. The strategic values model assumes that strategy is everyone's job and part of everyone's objectives and actions. Both models are legitimate, but don't work well as one integrated program. They should be segregated and funded separately. Closing competency gaps in strategic job families should be the basis for reporting on strategic human capital readiness. The strategic values model provides the basis for a revised performance management program for setting objectives for the entire work force.

3.4.2. Information Capital Readiness

Information capital (IC) is the raw material for creating value in the new economy. IC includes systems, databases, libraries and networks, and makes information and knowledge available to the organization. IC has value only in the context of the strategy.

Describe information capital: IC has two components: technology infrastructure, such as mainframes and communication networks; and information capital applications, a package of information, knowledge and technology. Information capital applications build on the infrastructure to support the organization's key internal processes. They can affect business transactions, analyze information, or transform the prevailing business model of the enterprise. Together, technology infrastructure and information capital applications form the information capital portfolio.

Align information capital to the strategy: Typically, 90 percent of the sizable annual expenses for a typical IT budget go to existing applications, with little left for the discretionary investment that funds strategic alignment. Companies can increase operating efficiencies to provide more discretionary money, but too much new informational capital too quickly cannot be effectively absorbed. Depending on the strategy, 5 to 15 percent of the budget is the goal for total information capital spending. This spending can either replace obsolete systems with state-of-the-art technology or apply totally new technology to new applications.

Measure information capital readiness: Information capital strategic readiness measures the degree of preparedness of the organization's information capital to support the enterprise's strategy. The most frequently used approach is a numerical indicator that identifies the status of each application. Management provides the subjective judgment for where to invest resources to create strategic readiness. Greater rigor can come from more quantitative, objective assessments of their application portfolios, such as surveying users about their satisfaction with each application, financial analysis of each application, and technical audits of the infrastructure of each application.

3.4.3. Organization Capital Readiness

Organization capital is the ability of the organization to mobilize and sustain the process of change required to execute the strategy. It provides the capability for integration and alignment of intangible and tangible assets with the strategy by changing behavior based on the strategy map.

Culture: The predominant attitudes and behaviors that characterize the functioning of an organization should back up the organization's strategy. The BSC forces the ambiguous replies to employee surveys to be defined more precisely. There are models for measuring culture and climate, but all are imperfect due to their incredible subjectivity. One option is to design a questionnaire specifically to evaluate the company's value proposition.

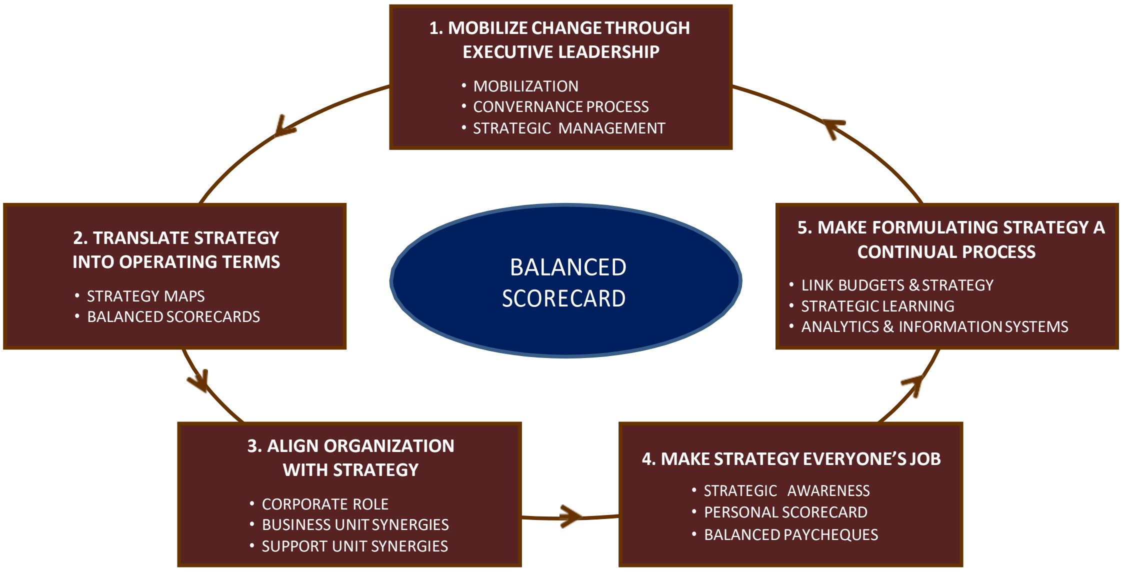
Leadership: Leadership to manage transformational change is a core requirement for becoming a strategy focused organization. Two approaches have been used to define the role of leadership. The leadership development process focuses on how leaders are developed in an organization. The leadership competency model focuses on what a leader should be by describing appropriate traits. Process developments use objective, verifiable indicators, such as key positions without successors or number of external hires. Companies focused on the development process must have a leadership competency model to guide the development process, and companies focused on leadership competencies must have leadership development programs.

Alignment: Alignment requires all employees to be empowered in the same direction. First, leaders must create awareness of the high-level strategic objectives to all employees in ways they can understand. Next, they must ensure that individuals and teams have local objectives and rewards that contribute to achieving targets for high-level strategic objectives.

Teamwork and knowledge sharing: There's no greater waste than a good idea used only once. Companies must generate, organize and develop knowledge, and distribute it through a "push system" or by providing easy access when people are searching for existing information relevant to their immediate needs.

4. BSC as a Strategy Implementation Process

Companies that successfully implement scorecards reinvent every part of their management system to focus on strategy. This is a significant departure from traditional management programs that link performance to financial frameworks—budgets or even newer shareholder value approaches (or non-financial frameworks like Total Quality). The successful organizations created a performance-management program that put strategy at the center of its management processes. Our continuing research has revealed a set of five principles (see the Figure below) that permit organizations to become strategy-focused, enabling them to execute their strategies rapidly and effectively.



The Principles of A Strategy-Focused Organization

Source: Kaplan, R. & Norton, D. (2001). Building a strategy-focused organization. Ivey Business Journal.

4.1. Mobilize Change through Executive Leadership

A successful BSC program starts with the recognition that it's not a "metrics" project, but a "change" project. The single, most important condition for success is the ownership and active involvement of the executive team. Strategy requires change from every part of the organization. If those at the top are not energetic leaders of the process, change will not take place and the opportunity will be missed.

John Kotter describes how transformational change must begin at the top, with three discrete actions by leaders. The leaders of successful BSC programs clearly followed this model.

- Establish a sense of urgency

Before change can occur, the organization must be "unfrozen" to understand why dramatic change is needed. In the case studies presented above, the companies were experiencing difficult and challenging times. The need for change, apparent to executives at the top, was not always apparent to the rest of the organization. People were comfortable with the status quo. They needed to accept that change was necessary and inevitable if they were going to be able to generate the benefits of a new strategy. The first step in the change process for each of these organizations was making the need obvious to all.

- Create the leadership team

The dynamics of the executive leadership team usually determine whether the BSC succeeds. The leaders of successful BSC adopters recognized that their current collection of functional specialists had to be transformed into a strategically focused, cross-functional, integrated team. Members of executive teams tend to view management issues from their individual, functional perspectives. These executives often have surprisingly little awareness of how other functions work.

- Develop the Vision and Strategy

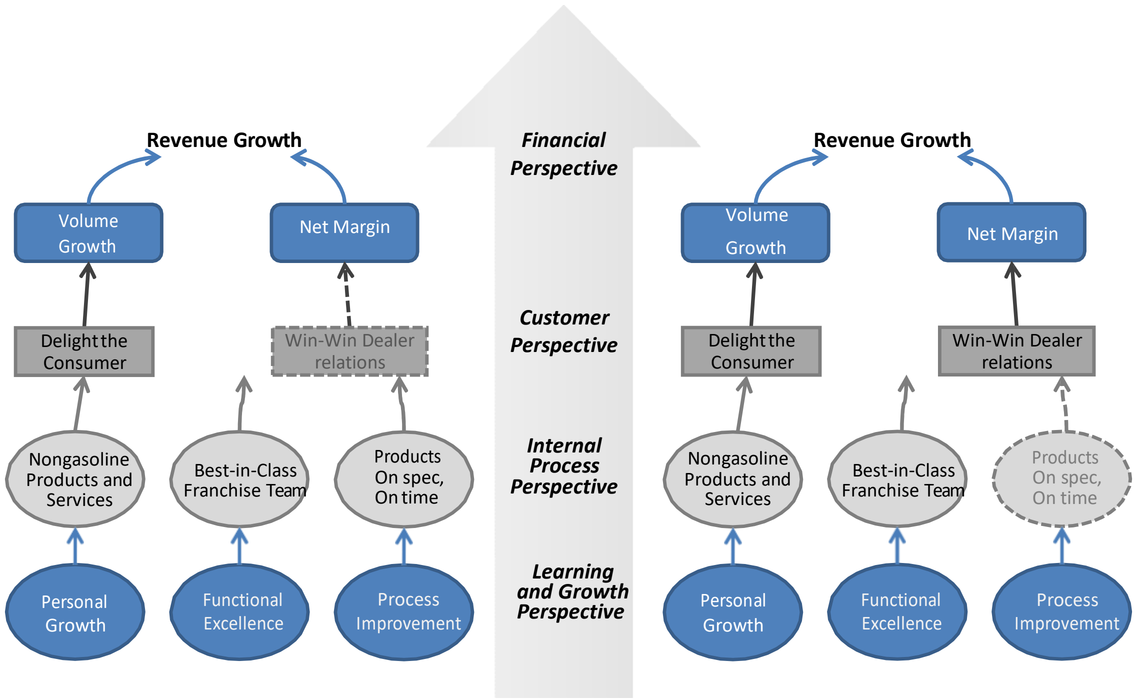
The creation of a shared vision and strategy was an effective way to build an executive leadership team (in contrast to a collection of individual business unit heads who met periodically to discuss business issues). The framework of the BSC guided the team in its development of a new vision and strategy. A tremendous amount of cross-fertilization took place as each element of the strategy was adapted to the score card format. At Mobil, the strategic issues surrounding customer segments (marketing), yield optimization (manufacturing), cost of capital (finance), and supply-chain management (transportation, pipeline) became the shared issues of the executive team. Historically, each of these issues was considered the domain of a single functional executive.

4.2. Translate Strategy into Operating Terms

The Balanced Scorecard provided that discipline for the successful organizations. In addition to building scorecards, the process helped executive teams to better understand and articulate their strategies. The foundation of the design is a **Strategy Map** (as shown in below figure), which defines the “architecture” of the strategy. The strategy map provides the specificity needed to translate general statements about high-level direction and strategy into specific objectives that are more meaningful for all employees and that they can act on. The strategy map is a visual framework of the cause and effect relationships among the components of an organization’s strategy, and it is used to integrate the four perspectives of a Balanced Scorecard (BSC) - financial, customer, internal process, and learning and growth.

Imagine that you are a general taking your troops into foreign territory. Obviously, you would need detailed maps showing the important towns and villages, the surrounding landscape, key structures like bridges and tunnels, and the roads and highways that traverse the region. Without such information, you couldn’t communicate your campaign strategy to your field officers and the rest of your troops.

Unfortunately, many top executives are trying to do just that. When attempting to implement their business strategies, they give employees only limited descriptions of what they should do and why those tasks are important. Without clearer and more detailed information, it’s no wonder that many companies have failed in executing their strategies. After all, how can people carry out a plan that they don’t fully understand? Organizations need tools for communicating both their strategy and the processes and systems that will help them implement that strategy.



What's Missing?

The Balanced Scorecard Strategy Map

Source: Kaplan, R. & Norton, D. (2000). Having Trouble with Your Strategy? Available on hbr.org.

Strategy maps provide such a tool. They give employees a clear line of sight into how their jobs are linked to the overall objectives of the organization, enabling them to work in a coordinated, collaborative fashion toward the company's desired goals. The maps provide a visual representation of a company's critical objectives and the crucial relationships among them that drive organizational performance.

Strategy maps can depict objectives for revenue growth; targeted customer markets in which profitable growth will occur; value propositions that will lead to customers doing more business and at higher margins; the key role of innovation and excellence in products, services, and processes; and the investments required in people and systems to generate and sustain the projected growth.

Strategy maps show the cause-and-effect links by which specific improvements create desired outcomes—for example, how faster process-cycle times and enhanced employee capabilities will increase retention of customers and thus increase a company's revenues.

From a larger perspective, strategy maps show how an organization will convert its initiatives and resources—including intangible assets such as corporate culture and employee knowledge—into tangible outcomes.

- Financial Perspective

Building a strategy map typically starts with a financial strategy for increasing shareholder value. (Nonprofit and government units often place their customers or constituents—not the financials—at the top of their strategy maps.) Companies have two basic levers for their financial strategy: revenue growth and productivity. The former generally has two components: build the franchise with revenue from new markets, new products, and new customers; and increase value to existing customers by deepening relationships with them through expanded sales—for example, cross-selling products or offering bundled products instead of single products. The productivity strategy also usually has two parts: improve the company's cost structure by reducing direct and indirect expenses, and use assets more efficiently by reducing the working and fixed capital needed to support a given level of business.

In general, the productivity strategy yields results sooner than the growth strategy. But one of the principal contributions of a strategy map is to highlight the opportunities for enhancing financial performance through revenue growth, not just by cost reduction and improved asset utilization. Also, balancing the two strategies helps to ensure that cost and asset reductions do not compromise a company's growth opportunities with customers.

- Customer Perspective

The core of any business strategy is the customer value proposition, which describes the unique mix of product and service attributes, customer relations, and corporate image that a company offers. It defines how the organization will differentiate itself from competitors to attract, retain, and deepen relationships with targeted customers. The value proposition is crucial because it helps an organization connect its internal processes to improved outcomes with its customers.

The inset of the exhibit "The Balanced Scorecard Strategy Map" highlights the different objectives for the three generic strategy concepts of operational excellence, customer intimacy, and product leadership. Specifically, companies that pursue a strategy of operational excellence need to excel at competitive pricing, product quality and selection, speedy order fulfillment, and on-time delivery. For customer intimacy, an organization must stress the quality of its relationships with customers, including exceptional service and the completeness of the solutions it offers. And companies that pursue a product leadership strategy must concentrate on the functionality, features, and overall performance of its products or services.

- Internal Process Perspective

Once an organization has a clear picture of its customer and financial perspectives, it can then determine the means by which it will achieve the differentiated value proposition for customers and the productivity improvements to reach its financial objectives. The internal process perspective captures these critical organizational activities, which fall into four high-level processes: build the franchise by innovating with new products and services and by penetrating new markets and customer segments; increase customer value by deepening relationships with existing customers; achieve operational excellence by improving supply chain management, the cost, quality, and cycle time of internal processes, asset utilization, and capacity management; and become a good corporate citizen by establishing effective relationships with external stakeholders.

An important caveat to remember here is that while many companies espouse a strategy that calls for innovation or for developing value-adding customer relationships, they mistakenly choose to measure only the cost and quality of their operations—and not their innovations or their customer management processes. These companies have a complete disconnect between their strategy and how they measure it. Not surprisingly, these organizations typically have great difficulty implementing their growth strategies.

The financial benefits from improved business processes typically reveal themselves in stages. Cost savings from increased operational efficiencies and process improvements create short-term benefits. Revenue growth from enhanced customer relationships accrues in the intermediate term. And increased innovation can produce long-term revenue and margin improvements. Thus, a complete strategy should involve generating returns from all three of these internal processes.

- Learning and Growth Perspective

The foundation of any strategy map is the learning and growth perspective, which defines the core competencies and skills, the technologies, and the corporate culture needed to support an organization's strategy. These objectives enable a company to align its human resources and information technology with its strategy. Specifically, the organization must determine how it will satisfy the requirements from critical internal processes, the differentiated value proposition, and customer relationships. Although executive teams readily acknowledge the importance of the learning and growth perspective, they generally have trouble defining the corresponding objectives.

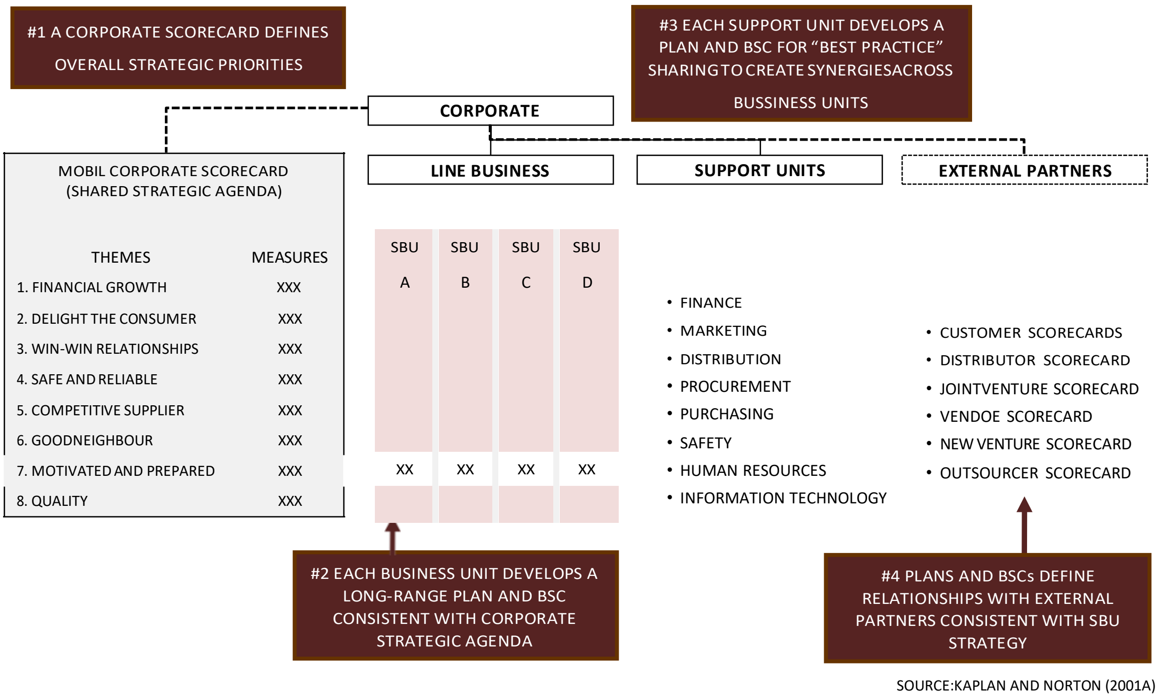
Strategy maps also help identify when scorecards are not truly strategic. Many organizations have built stakeholder scorecards, not strategy scorecards, by developing a seemingly balanced measurement system around three dominant groups of constituents: employees, customers, and shareholders. A strategy, however, must describe how a company will achieve its desired outcome of satisfying employees, customers, and shareholders. The "how" must include the value proposition in the customer perspective; the innovation, customer management, and operating processes in the internal process perspective; and the employee skills and information technology capabilities in the learning and growth perspective. These elements are as fundamental to the strategy as the projected outcome of the strategy.

Another limitation occurs when companies build key performance indicator (KPI) scorecards. For example, one financial services organization identified the four Ps in its balanced scorecard: profits, portfolio (the volume of loans), process (the percentage of processes that are ISO certified), and people (the diversity of new employees). Although this approach was more balanced than using just financial measures, a comparison of the four Ps with a strategy map revealed several missing components: no customer measures, only a single internal-process metric—which was focused on an initiative, not an outcome—and no defined role for information technology, a strange omission for a financial services organization. In actuality, KPI scorecards are an ad hoc collection of measures, a checklist, or perhaps elements in a compensation plan, but they don't describe a coherent strategy. Unless the link to strategy has been clearly thought through, a KPI scorecard can be a dangerous illusion.

4.3. Align the Organization with the Strategy

The BSC is a powerful tool to describe a business unit's strategy. But organizations consist of numerous sectors, business units and specialized departments, each with its own operations and often its own strategy. If synergy is to occur, the strategies across these units should be coordinated. The BSC can and should be used to define the strategic linkages that integrate the performance of multiple organizations. This is not an easy task. Functional departments, such as finance, manufacturing, marketing, sales, engineering and purchasing, have their own bodies of knowledge, language and culture. Functional silos arise and become a major barrier to strategy implementation, since most organizations have great difficulty communicating and coordinating across these functions. For organizational performance to be more than the sum of its parts, individual strategies must be linked and integrated. The corporate role defines the linkages expected to create synergy and ensures that the linkages actually occur.

The following figure shows the linkages at the researched unit of the organization. The high-level strategic themes (in #1 of the Figure) guide the development of the Balanced Scorecards in the business units (in #2 of the Figure) that are either geographic regions or product lines, such as lubricants. Each unit formulates a strategy appropriate for its target market in light of the specific circumstances it faces (competitors, market opportunities and critical processes) but that is consistent with the themes and priorities of the unit. Without corporate prompting, these joint activities typically don't take place. The Corporate Scorecard provides the communication and coordination mechanism across business unit scorecards. The measures at the individual business unit levels do not have to add to a corporate or divisional measure, unlike financial measures that aggregate easily from subunits to departments to higher organizational levels. The business unit managers choose local measures that influence, but are not necessarily identical to, the corporate scorecard measures.



Alignment the Organization with its Strategy

Source: Kaplan, R. & Norton, D. (2001). Building a strategy-focused organization. Ivey Business Journal.

Beyond aligning the business units, strategy-focused organizations must also align their staff functions and shared service units, such as human resources, information technology, purchasing, environmental and finance (#3 of the Figure). Often, this alignment is accomplished with a service agreement between each functional department and the business units. The service agreement defines the menu of services to be provided, including their functionality, quality level and cost. The service agreement becomes the basis of the Balanced Scorecard constructed by the functional department. The department's customers are the internal business units, the value proposition is defined by the negotiated service agreement, and the financial objectives are derived from the negotiated budget for the department. Next, the department identifies the internal process, and learning and growth objectives that drive its customer and financial objectives.

When this process is complete, all the organizational units—line business units and staff functions—have well-defined strategies that are articulated and measured by Balanced Scorecards and strategy maps. Because the local strategies are integrated, they reinforce each other. This alignment allows synergies to occur so that the whole exceeds the sum of the parts. Linkages can also be established across corporate boundaries (as #4 of the Figure). Several companies constructed Balanced Scorecards to define their relationships with key suppliers, customers, outsourcing vendors and joint ventures. Companies use such scorecards with external parties to be explicit about (1) the objectives of the relationship, and (2) how to measure the contribution and performance of each party in the relationship by factors other than price or cost.

4.4. Make Strategy everyone's Job

Sources have estimated that approximately 50 percent of all work performed in industrialized countries today is knowledge work. Workforce knowledge represents an asset that we are just beginning to use effectively. In this structure, strategic information and decision-making can no longer be limited to executives and senior managers. Knowledge workers make strategic choices every day. Successful BSC users took steps to ensure that everyone in the organization understood the strategy, was aligned with it, and capable of executing it. Traditional human resource systems and processes played an essential role in enabling this transition.

- Communication and education to create awareness

A prerequisite for implementing strategy is that all employees understand the strategy. A consistent and continuing communication program is the foundation for organizational alignment. No single medium is sufficient to transform everyone's understanding of the strategy. It must be conveyed in all communication media and vehicles and reinforced by the personal behavior of executives.

- Personal alignment

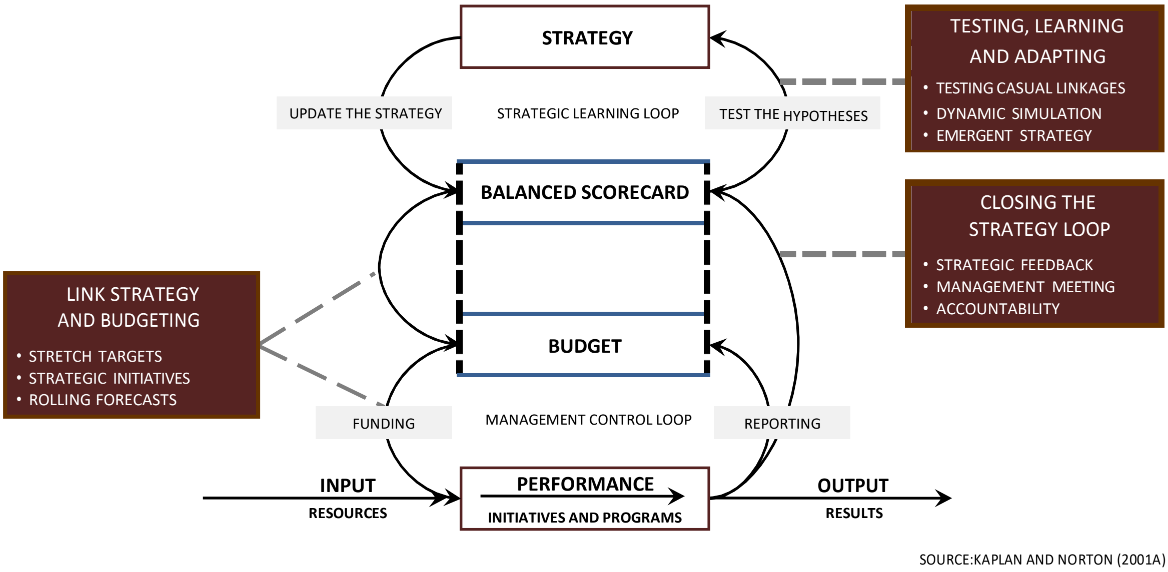
All of the successful BSC users aligned individuals with the strategy through personal goal-setting processes; some have even created personal scorecards. Setting objectives for individuals, of course, is not new. Management-by-Objectives (MBO) has been around for decades. But MBO is distinctly different from the kind of alignment achieved with the BSC. The objectives in an MBO system are established within the structure of the individual's organizational unit, reinforcing narrow, functional thinking. The individual objectives established within the framework of the BSC are cross-functional, longer-term and strategic.

- Incentive compensation

Those who implemented the BSC successfully moved quickly to link incentive compensation to targeted scorecard measures. This linkage unleashed powerful forces. Most successful BSC users ultimately conclude that, to modify behavior as required by the strategy and as defined in the scorecard, change must be reinforced through incentive compensation. When the BSC is linked to the incentive compensation program, there is a visible increase in the level of interest in the details of the strategy.

4.5. Make Formulating Strategy a Continual Process

Most organizations build their management processes around the budget and operating plan. The monthly management meeting reviews performance versus plan, discusses variances from past performance, and requests action plans for dealing with short-term variances. Such tactical management is necessary, but in most organizations that is the only thing management does. Besides the annual strategic planning meeting, no meeting occurs where managers discuss strategy. We surveyed participants at conferences and learned that 85 percent of their management teams spend less than one hour a month discussing strategy. Companies with the BSC adopt a new "double-loop process" to manage strategy. The process integrates the management of tactics with the management of strategy, using three important processes, as depicted in the following figure.



Making Strategy a Continual Process

Source: Kaplan, R. & Norton, D. (2001). Building a strategy-focused organization. Ivey Business Journal.

- Linking strategy to the budgeting process

First, organizations link strategy to the budgeting process. They use the Balanced Scorecard as a screen for evaluating potential investments and initiatives. Companies usually have an operating budget that authorizes spending for producing and delivering existing products and services, and marketing and selling them to existing customers. These organizations now introduce a strategy budget to fund initiatives that will develop entirely new capabilities, reach new customers and markets, and make radical improvements in existing processes and capabilities. This distinction is essential. Just as the Balanced Scorecard attempts to protect long-term objectives from short-term sub-optimization, the budgeting process must protect the long-term initiatives from the pressures to deliver short-term financial performance.

- Making strategy formulation continual

The second step in making strategy formulation continual is to introduce a management meeting to review strategy. As obvious as this step sounds, such meetings didn't exist in the past. Now, management meetings are scheduled on a monthly or quarterly basis to discuss the Balanced Scorecard, so that a broad spectrum of managers come together to monitor organizational performance against the short-term targets for the scorecard's financial and non-financial measures. The managers check whether strategic initiatives are being implemented as planned. On the surface, the process is similar to the typical monthly operating reviews. However, instead of reviewing only financial performance, managers now review the performance of, and take corrective actions for, all the measures on the Balanced Scorecard. The process creates a focus on strategy that did not exist before.

Information feedback systems change to support the new management meetings. Many organizations create an open reporting environment in which performance results are made available to everyone in the organization. Building upon the principle that “strategy is everyone’s job,” they empower “everyone” by giving them the knowledge needed to do their jobs.

- Making strategy development continual

The third and final step for making strategy development continual sees a process evolve for learning and adapting the strategy. The initial Balanced Scorecard represents hypotheses about the strategy; at the time of formulation, it is the best estimate of the actions expected to create long-term financial success. The scorecard-design process makes the cause-and-effect linkages in the strategic hypotheses explicit. As the scorecard is put into action and feedback systems begin their reporting on actual results, an organization can test the hypotheses of its strategy to see whether its strategy is working.

4.6. Being Strategy-Focused

The Balanced Scorecard has enabled organizations to introduce a new governance and review process, one focused on strategy, not tactics. The new governance process emphasizes learning, team problem-solving and coaching. Review meetings now look into the future, exploring how to implement strategy more effectively, and identifying the changes that need to be made in the strategy—based on what has been learned from the past.

This is a management process attuned to the needs of contemporary businesses. The essential ingredient is a simple framework and tool that allows strategy to be articulated clearly. Without such a strategic framework, there can be no strategic management system. The Balanced Scorecard is the heart of the management system that strategy-focused organizations will use to build their future.

5. Management by objectives (MBO) and BSC

MBO was first introduced to businesses in the 1950s as a system called “management by objectives and self-control”. The basis for this system is that an organization will be more successful if: “their efforts ... all pull in the same direction, and their contributions... fit together to produce a whole, without gaps, without friction, without unnecessary duplication of effort”. This focus on goal alignment as a way to improve organizational performance was, at the time, thought to provide the best path to increased profitability.

MBO and the Balanced Scorecard are essentially similar. They are both based on the development of strategic measurements (although the Balanced Scorecard is more explicit about what those strategic measurements are). They both focus on goal congruence (the rational goal model), as well as collaboration throughout all levels of the firm (the human relations model). Likewise, they both imply Theory Y as they assume that employees will be motivated by rewards and incentives associated with goals that they have helped determine.

One notable difference between the two systems is their degree of explicitness. MBO is an open-ended management system based on the collaborative determination of goals and measures (without detailing what those goals and measures should be). The Balanced Scorecard is also based on the collaborative determination of goals and measures, but is more focused than MBO as it prescribes the four categories of customer satisfaction, internal processes, innovation and learning, and financial measures.

Part Three: HR Measures

1. Workforce Scorecard

As described, the Balanced Scorecard helps managers define the performance categories that relate to the company's strategy. The managers then translate those categories into metrics and track performance on those metrics. Besides traditional financial measures and quality measures, companies use employee performance measures to track their people's knowledge, skills, and contribution to the company.

Because the Balanced Scorecard focuses on the strategy and metrics of the business, Mark A. Huselid, Brian E. Becker, and Richard W. Beatty developed the HR and Workforce Scorecard to provide framework specific to HR. A firm needs a business strategy, a workforce strategy, and a strategy for the HR function. These strategies are operationalized in Balanced Scorecard, the Workforce Scorecard, and HR Scorecard, respectively. As a result, the Workforce Scorecard is a crucial lever in the strategy execution process. The key dimensions of that process include operational and customer success, which in turn help create financial success. Workforce success is often the key performance driver, directly or indirectly, for these other elements of strategic success.

The Workforce Scorecard offers a framework that identifies and measures the outcomes, behaviors, competencies, mind-set, and culture required for workforce success and reveals how each dimension impacts the bottom line. The lynchpin of this perspective is an emphasis on looking at the role of "human capital" from the "outside in" (or customer back), not from the "inside out" (starting with the HR function).

Effective workforce management strategies and practices can have a powerful effect on business outcomes, including productivity, profitability, and shareholder value, while firms with highly differentiated product strategies but generic or undifferentiated workforce strategies. Workforce Scorecard offers an approach to developing a workforce strategy as well as a BSC designed to assess the success of corporate and SBU strategies. Thus, workforce Scorecard is used to bridge the gap between the development of a business strategy and its implementation through people.

1.1. Workforce Strategy

1.1.1. Generic Best Practices

The fundamental problem with doing this is that while a particular practice may well be "best in class" in its "native" firm, there is no reason to expect that the "best practices" taken from a wide variety of firms and industries will work together in a synergistic manner, let alone do a good job in helping to execute the firm's strategy. From the perspective of the workforce, this type of misalignment can be painfully obvious.

In order for a firm to transform its system of managing work- force performance into a strategic asset, that system must contribute more directly to strategy execution. Instead of relying on best practices, this requires the development of workforce strategies that are increasingly differentiated between firms and within firms. It is this increasing differentiation that is the hallmark of the workforce systems we describe next.

1.1.2. Core Workforce Differentiation

Firms that exhibit core workforce differentiation attempt to match each of the elements of the workforce strategy to this overarching business strategy. As a result, the defining characteristic of a core workforce strategy is its homogeneity or consistency within a particular firm. Focusing the workforce system at that level implies a core set of skills, competencies, and behaviors that when taken together will achieve this goal.

Workforce differentiation in this framework is similar to the notion of core competencies in that it delivers a comprehensive work- force capability for this overarching value proposition. The focus is on one company-wide description of the workforce capabilities required for the particular core strategy.

1.1.3. Strategic Workforce Customization

Strategic workforce customization involves a more explicit linkage between the workforce strategy and the strategy performance drivers. It means that there is no one homogeneous workforce strategy for a particular corporate strategy, but rather the workforce strategy will be differentiated across the firm's strategic performance drivers. Unlike core workforce differentiation, which differentiates the workforce strategy on just two or three core strategies, performance drivers within those core strategies are also potential points of differentiation. The point is that not only will workforce strategies differ across firms that have different core strategies, but they will differ within firms as well.

The Workforce Scorecard identifies and measures the behaviors, skills, mind-sets, and results required for the workforce to contribute to the company's success. The Workforce Scorecard has four key sequential elements:

1.2. Workforce mind-set and culture

First, does the workforce understand the strategy, embrace it, and does it have the culture needed to support strategy execution?

Workforce mind-set and culture are important because they influence how everyone behaves. To be able to execute the firm's preferred strategy, everyone must understand what they are expected to do. You need measures here that show how well everyone understands the firm's business model and the role of the workforce.

- % of the workforce that understand the firm's business model and underlying commercial strategy
- % of the workforce that have demonstrated their commitment to the firm's strategy
- % of the workforce that currently have the skills required to execute the strategy
- % of the workforce currently undergoing training in order to gain the requisite

skill sets

- % of the workforce that feels the firm's culture supports strategy execution
- The degree of consistency and clarity which is associated with messages provided by top management and HR
- The extent to which the firm's culture supports "A" players and makes it possible for superior performance to be delivered by talented individuals
- The extent to which all necessary business information (including real-time performance data) is made available to the workforce in order to facilitate better decision making and performance tracking

1.3. Workforce competencies

Second, does the workforce, especially in the strategically important or "A" positions, have the skills it needs to execute strategy? ("A" positions are those job categories most vital to the company's success.)

Workforce competencies show what people are capable of doing. Competencies without motivation will get you nowhere. Similarly, if your people are highly motivated but lack the basic competencies required, nothing much will happen either. You need both the right competencies and the right motivation to succeed and ideally excel.

- Total % of workforce who are recognized as "A" players
- % of workforce who are currently "B" players with the potential to grow and evolve into "A" players
- Average % of total remuneration packages which are performance based for "A" players.
- % of "A" players who have the opportunity to earn share options
- % of "A" players who earned their bonuses in the last financial year
- % of the overall training and development budget spent on "A" players.
- Average ranking for executives on the standardized skills and proficiency test
- Determination of how many qualified people would be eligible to fill any executive openings which arise
- % of exit rate for "A", "B" and "C" players.
- Extent to which people have the opportunity to be exposed to assignments that will enhance skills

1.4. Leadership and workforce behaviors

Third, are the leadership team and workforce consistently behaving in a way that will lead to attaining the company's key strategic objectives?

Are the leadership team and workforce consistently behaving in a way that will lead to achieving our key strategic objectives? Have we identified and nurtured “A” Players in “A” Positions?

“A” positions describe those positions that have a significant on the execution of the firm’s strategy. “A” players are star performers with high potential in their professional fields.

Leadership and workforce behavior measures whether or not the workforce is behaving in a way which is consistent with achieving the key objectives. Managers especially have to be clear about what the workforce should be doing or there will be significant negative impact on results actually achieved.

- Average score on a consistently applied leadership survey
- % of executives who are actively engaged in knowledge sharing and training programs
- Changes in the team performance index which measures the effectiveness of teams
- Estimates of how effective the firm is in retaining its best “A” players
- Estimated exit rate of “C” players
- Average changes in performance appraisal ratings over an extended period of time
- % of employees who have met goals for customer satisfaction
- % of employees who have skills and experience outside those used in their current job functions
- % of improvement in key indicators of customer satisfaction
- Number of requests submitted for transfers

1.5. Workforce Success

Fourth, has the workforce achieved the key strategic objectives for the business? If the organization can answer “yes” to the first three elements, then the answer should be yes here as well.

Workforce success focuses specifically on whether or not the workforce have executed the firm’s strategy. In practical terms, your biggest and most profitable customers will determine whether or not your workforce is a success. If you deliver on the factors they value the most highly, you’ve executed your strategy adequately. Fail to deliver in those key areas and nothing else will compensate.

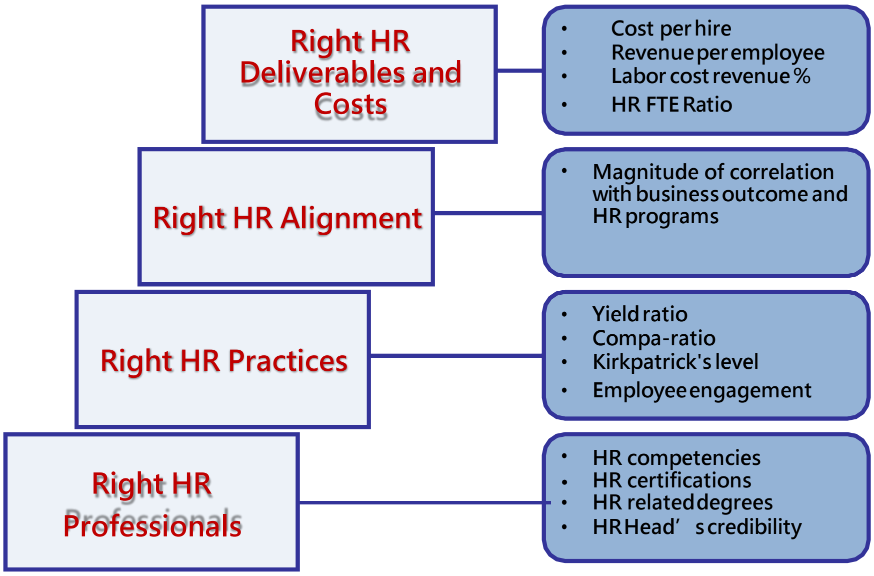
- Average market share period-to-period
- Price premium achieved versus the competition
- Customer complaints as a % of sales

- Customer repurchases intent
- Number of new products offered this financial period
- %of customers who have indicated they are satisfied with our products and services
- % of new shareholders added this financial period
- % of orders which are shipped on time

2. HR Scorecard

The workforce scorecard is designed to solve the problem about the value creation process from the workforce success. At the other end of the value creation process is the HR function and the role played by the HR professionals. The HR Scorecard highlighted the strategic role HR professionals and the HR management system play in the successful implementation of an organization’s strategy. Also, The HR Scorecard is a strategic HR measurement system that will help you measure, manage and improve the strategic role of your HR department.

The HR Scorecard consists of measurements of HR deliverables and cost, right HR alignment, right HR practices, and right HR professionals.



HR Scorecard

Source: Becker, B.E., Huselid, M.A., & Ulrich, D (2001). The HR Scorecard: Linking People, Strategy, and Performance. Boston, MA: Harvard Business Review Press.

2.1. Right HR Deliverables and Costs

Have we achieved the right levels of Workforce Success, Workforce Behaviors, Workforce Competencies, and Workforce Mindset with cost-benefit efficiency?

Measures of HR deliverable are taken directly from the workforce scorecard, Workforce Success, Workforce Behaviors, Workforce Competencies, and Workforce Mindset, which is intended to demonstrate that line and HR managers need to be held accountable from the same outcomes.

In developing metrics to help track the right HR deliverables and workforce cost, the key question to be asked is: Is our total investment in the workforce (not just HR function) appropriate (not just minimized)? The key challenge is to select useful metrics, which should be guided by the firm's strategy.

When choosing HR efficiency measures, you must separate measures that impact a company's strategy from those that don't. Core efficiency measures are those HR expenditures that make no direct contribution to the company's strategy implementation, but must still be taken care of. Examples include workers' compensation cost per employee and the percent of correct entries made to the HR information system. Strategic efficiency measures assess the efficiency of HR activities the produce HR deliverables. Although it is important to know the costs of workers' compensation benefits and the accuracy of internal data entry, these items don't add to the overall strategic value of HR to the company. However, strategic efficiency measures, such as the cost per hire, cost per training hour and HR expense per employee, can yield considerable strategic value.

Finally, many HR managers are tempted to think of HR deliverables only in terms of organizational capabilities, such as corporate leadership. However, the HR deliverables in the Scorecard can have a more concrete, measurable impact on the success of the company's strategy. HR enablers (such as employee stability) that are tied to specific performance drivers (such as R&D cycle time) make a more compelling case for HR's strategic importance. Here are some indicators that can be used to measure HR deliveray:

- Absence rate= days absent in month ÷ (average # of employees during a month x # of workdays)
- Benefit or program costs per employee = total cost of employee benefit or program ÷ total # of employees
- Benefits as a percent of salary = annual benefits cost ÷ annual salary
- Compensation as a percent of total compensation = annual salary ÷ total compensation (salary + benefits + additional compensation)
- Compensation or benefit revenue ratio = compensation or benefit cost ÷ revenue
- Cost per hire = [(External Recruiting Costs) + (Internal Recruiting Costs)] / Total Number of Hires in a Time Period
- Engagement or satisfaction rating = percent of employees engaged or satisfied overall or with a given aspect of the workplace
- Percent of performance goals met or exceeded = # of performance goals met or exceeded ÷ total # of performance goals

- Percent receiving performance rating = # of employees rated under a given score or rating on their performance evaluation ÷ total # of employees
- Revenue per employee = revenue ÷ total # of employees
- Return on investment (ROI) = (total benefit / total costs) x 100
- Time to fill (average) = total days taken to fill a job ÷ number hired
- Training/development hours = sum of total training hours ÷ total # of employees
- Tenure = average # of years of service at the organization across all employees
- Turnover (annual) = # of employees who left the job during 12 month period ÷ average actual # of employees during the same period
- Turnover costs = total costs of separation + vacancy + replacement + training
- Utilization percent = total number of employees utilizing a program/service/benefit ÷ total number of employees eligible to utilize a program/service/benefit
- Workers' compensation cost per employee = total workers compensation cost for year ÷ average number of employees
- Workers' compensation incident rate = (number of injuries and/or illnesses per 100 full-time employees / total hours worked by all employees during the calendar year) x 200,000
- Yield ratio = percentage of applicants from a recruitment source that make it to the next stage of the selection process

2.2. Right Types of HR Alignment

The HR system alignment measures must be directly linked to the HR deliverables that impact company strategy. As discussed above, start by identifying the strategic HR deliverables, then identify and measure the system elements that make a significant contribution to particular HR deliverables. Are our HR practices aligned with the business strategy and differentiated across positions, where appropriate?

Alignment can take two forms. Internal alignment reflects the extent to which our workforce management practices fit together in a cohesive whole and are mutually reinforcing. External alignment reflects the extent to which the firm's entire bundle of workforce management practices effectively helps to execute strategy. Because HR practices are often developed and managed independently by various sub-functions within the HR department, we would not expect (and in fact do not often find) those elements to work together in a way that makes sense to the workforce. Alignment proceeds in two successive phases: alignment of HR practices; alignment of HR practices with the HR deliverables and costs. We can measure HR alignment as follows:

- Extent to which customer expectations are addressed by learning programs
- Extent to which employees are rewarded and promoted by performance and competencies
- Extent to which employees understand what is expected of them throughout the performance management process
- Extent to which hiring, evaluation, and compensation practices seek out and reward competencies and knowledge sharing
- Extent to which HR measurement systems are seen as credible
- Extent to which level of reward is appropriately matched with level of accomplishment
- Extent to which required workforce competencies are reflected in staffing and compensation
- Extent to which the firm's training and development programs effectively support organization strategy and performance results (e.g., ISO 10015)
- Extent to the firm's organizational design (i.e., the way in which jobs and work are structured) effectively support the firm's strategy
- Extent to which the firm has developed a competency model for hiring, rewarding, and developing people
- Internal (consistency of HR policies and practices) alignment index (e.g., P-CMM)
- Ling managers' satisfaction with HR activities' outcome
- Magnitude of correlation with business outcome and HR programs

2.3. Right HR Practices

The key question is: Have we designed and implemented strategically aligned world-class HR management policies and practices with the business values? While this question might seem quite basic, firms actually differ dramatically in the quality with which they manage the workforce. Here are some example HR practice metrics:

- Acceptance per offer ratio
- Number of applicants contacted compared with those reporting for job interviews
- Time to fill a job or Cost of filling a job
- Percent of jobs filled with candidates on succession plan
- Selection Ratio: number of qualified applicants per hire
- Ratio of backup talent (number of prepared backups in place for top "X" jobs)
- Percent of "A" positions filled with "A" players

- Exit rate of “C” players in “A” positions
- Percent “A” players promoted per year
- Percent of employee in “C” positions with temporary (outsourced) contracts
- Percent of new hires selected based on the results of a validated selection test
- Percent of the workforce for which “A” and “C” performance appraisals have been accurately accessed
- Percent of the workforce that has its merit increase or incentive pay determined by a performance appraisal
- Acceptance of appraisal processes by employees
- Average differential in merit pay awards between high performers and other workforce
- Percent of payroll spent on training
- Comparison: those who did and did not attend training
- Ratio of advanced to remedial education
- Time for new T+D program design
- Total rewards market percentile for “A” players
- Speed of payroll processing
- Ratio of salary to competitor salary for “A” positions
- Personnel costs per revenue dollar
- Lost work days or Almost lost work days
- Incidence and Cost of injuries
- Percent of unionized employees on problem solving
- Acceptance of messages from management and HR
- Speed and effectiveness of responses to employee complaints
- Percent of suggestions implemented
- Extent of meaningful jobs to handicapped employees
- Percent of compliance with regulated employment practices
- Percent of nontraditional workers in applicant pool
- Percent regrettable turnover
- Percent retention of “A” players

- Retention rate of “A” players in “A” positions
- Time to promotion for “A” players

2.4. Right HR Professionals

The world-class HR management systems and practices do not just happen-they are developed specifically by HR professionals who have a deep understanding not only of the firms’ strategy, and goals, but also of the field of evidence-based Human Resource Management (HRM) and the allied social sciences. The key question is “Do our HR professionals have the skills they need to design and implement a world-class HR management system?”

There is a significant and increasing body of professional knowledge in the field of HRM, and insuring that HR mangers understand the latest developments in the field is an important opportunity for improvement many organizations. Measures of HR professional competencies can be found as follows:

- HR managers’ ratings on validated 360 degree competency-assessment tool
- Rating of HR competency scale developed by Dave Ulrich:

  -Strategic positioners who understanding evolving business contexts

  -Credible activists who build relationships of trust

  -Capability builders who define, audit and create organization capabilities

  -Change champions who initiate and sustain change

  -HR innovators and integrators who look for new ways to do HR practices

  -Technology proponents who use technology for efficiency to connect employees
- Percent of HR budget devoted to “HR for HR” certified programs for HR staff
- Percent of HR professionals with graduate degrees in HR, Industrial and Labor Relations, I/O psychology, or MBA
- Percent of HR professionals with PHR, SPHR, GPHR, HRBP, HRMP, or other global recognized HR certifications (e.g., CPLP, GRP, HRIP, IPMA-HR)

3. HR Cost Benefit Analysis

A complementary process to the HR Scorecard is an HR cost benefit analysis. While the Scorecard identifies where your company’s HR department wants to be to achieve strategic goals, HR cost benefit analysis helps your company choose how it will get there by looking at the Return on Investment (ROI) of HR programs and policies.

3.1. HR ROI

Determining the ROI of a particular HR policy or practice isn’t complicated. Essentially, you need to assess the total costs and total benefits associated with the investment and then calculate benefits less costs. Due to costs are borne today, but benefits are most likely going to show up in the future. The challenge lies in collecting or estimating data.

3.2. Costing

To generate estimates, you need to know what to count as cost and what to ignore. There are two major types of cost — fixed and variable. Fixed costs are those that don't vary with the level of production. For example, if your company has a training center, some costs associated with the building are fixed — they don't change whether you have one class a week or ten in the facility. But other costs are variable — they increase or decrease depending on how many classes use the building. It takes more electricity to run the computers and the restrooms require more supplies when usage goes up.

Again using the training center as an example, how would you estimate the cost of providing a new training program for mid-level managers? Suppose the training center is operating at 60 percent capacity and your proposed program would boost that to 80 percent? Do you take the fixed costs of running and maintaining the center and add them to your cost estimate? Using conventional accounting principles, you would. But that will increase the costs of your project and decrease the ROI. Instead, it may make more sense to just add in the additional variable costs.

Don't be so enamored of projects that you persist in pouring more assets into them only to get diminishing returns. Suppose you had begun restoring an old car and have invested $25,000 in it. These are your sunk costs. If you sold it today, it would fetch you $15,000, a $10,000 loss. If you finish the car, it will cost an additional $20,000 and be worth $30,000 and your loss would increase to $15,000. The same applies to programs you have begun but which are obviously not going to pay off as you expected. Don't throw more resources at the project, only to guarantee that the loss will be greater.

3.3. Workforce Performance

You also have to understand the financial impact of workforce performance. Determining the ROI in people requires comprehending the impact of high- and low performing workforce on the firm. The question is whether, on average, workforces in a particular job contribute a little or a lot to the firm's success.

Assuming workforces in a category contribute to profitability, you next need to gauge the variability of the impact of workforce performance on firm financial performance. For example, if the very best employees in a job category only contribute a little more than the average employee, there is no need to invest additional resources in attracting, selecting and developing people like the best employee. But if the difference on the bottom line is great, you will want to consider making the investment.

3.4. Net Present Value (NPV)

Assuming you have determined that training will make an average worker into an excellent worker, you can finish calculating the ROI of your proposed training program. The hardest part of the calculation is that much of the benefit you will reap won't occur immediately. You will need to calculate the Net Present Value (NPV) of the benefit the company will reap over the years. NPV analysis draws together costs and benefits over multiple time periods, and compensation for uncertainty, lost opportunity costs, and costs of capital to assess the overall potential value of a proposed HR program.

For example, assume that you are planning a new integrated performance management and incentive compensation program. The total program cost will be $250,000. You estimate that the program will increase annual profits $270,000 per year for five years. Because the program involves incentive pay, it will also increase wages by $130,000 per year. (5 years NPV factor= 3.433) The NPV is 280,620 as calculated as follow:

$$(270,000 * 3.433) - 250,000 - (130,000 * 3.433) = 280,620$$

4. The People Capability Maturity Model (PCMM)

Organizations are now competing in two markets, one for their products and services and one for the talent required to produce or perform them. An organization's success in its business markets is determined by its success in the talent market. At the very time that business markets are expanding, talent markets seem to be shrinking. In every domain of business, executives know that their ability to compete is directly related to their ability to attract, develop, motivate, organize, and retain talented people.

As agility in responding to continual change in technological and business conditions has become critical to success, organizations must strive to create learning environments capable of rapidly adjusting to the changes engulfing them. A critical component of agility is a workforce with the knowledge and skills to make rapid adjustments and the willingness to acquire new competencies. In fact, an agile workforce may reduce some of the stress currently being experienced as a talent shortage.

Organizations have attempted to apply many different techniques in their efforts to move to- wards strategic human capital management. They combine downsizing with restructuring, apply reengineering or process improvement, improve information sharing, clearly communicate the organization's mission, institute employee involvement programs, establish formal complaint resolution procedures, institute gain-sharing or other incentive plans, emphasize the importance of training the workforce, formalize performance management and feedback processes, perform job or work analysis and design, support job rotation, begin to establish team-based work designs, retrain employees to meet changing demands, provide flexible work arrangements, address diversity issues, conduct formal mentoring programs, and align business and human resources strategies.

The People Capability Maturity Model (P-CMM) is a tool that helps HR successfully addresses and measures the critical people issues in an organization. Based on the best practices in fields such as human resources, knowledge management, and organizational development, the P-CMM guides organizations in improving their processes for managing and developing their workforce. The P-CMM helps organizations characterize the maturity of their workforce practices, establish a program of continuous workforce development, set priorities for improvement actions, integrate workforce development with process improvement, and establish a culture of excellence.

The original concept for a process maturity framework was developed by Watts Humphrey and his colleagues at IBM in the early 1980s. In his 27 years at IBM, Humphrey noticed that the quality of a product was directly related to the quality of the process used to develop it. Having observed the success of total quality management in other parts of industry, Humphrey wanted to install a Shewart-Deming improvement cycle (Plan-Do-Check-Act) into a software organization as a way to continually improve its development processes. The P-CMM applies the principles of Humphrey's maturity framework to the domain of workforce practices. Each of the People CMM's five maturity levels represents a different level of organizational capability for managing and developing the workforce. Each maturity level provides a layer in the foundation for continuous improvement and equips the organization with increasingly powerful tools for developing the capability of its workforce.

Maturity Levels	Process Threads			
	Developing competency	Building workgroups and culture	Motivating and managing performance	Shaping the workforce
5 Optimizing	Continuous Capability Improvement		Organizational Performance Alignment	Continuous Workforce Innovation
4 Predictable	Competency Based Assets Mentoring	Competency Integration Empowered Workgroups	Quantitative Performance Management	Organizational Capability Management
3 Defined	Competency Development Competency Analysis	Workgroup Development Participatory Culture	Competency Based Practices Career Development	Workforce Planning
2 Managed	Training and Development	Communication and Coordination	1.Compensation 2.Performance Management 3.Work Environment	Staffing

The People Capability Maturity Model (PCMM)

Source: Curtis, B., Hefley, W.E., & Miller, SA. (2001). People Capability Maturity Model (P-CMM) Version 2.0. Pittsburgh, Pennsylvania, U.S.A.: Carnegie Mellon University Software Engineering Institute.

4.1. Maturity Level 1 (The Initial Level)

Organizations at the Initial Level of maturity usually have difficulty retaining talented individuals. Even though many low maturity organizations complain about a talent shortage, the inconsistency of their actions belies whether they actually believe it. Low maturity organizations are poorly equipped to respond to talent shortages with anything other than slogans and exhortations. Despite the importance of talent, workforce practices in low maturity organizations are often ad hoc and inconsistent. In some areas, the organization has not defined workforce practices, and, in other areas, it has not trained responsible individuals to perform the practices that exist. Organizations at the Initial Level typically exhibit four characteristics:

4.1.1. Inconsistency in performing practices,

4.1.2. Displacement of responsibility,

4.1.3. Ritualistic practices, and

4.1.4. An emotionally detached workforce.

Generally managers and supervisors in low maturity organizations are ill prepared to perform their workforce responsibilities. Their management training is sparse and, when provided, tends to covers only those workforce practices with the greatest legal sensitivity. The organization may typically provide forms for guiding workforce activities such as performance appraisals or position requisitions. However, too often little guidance or training is offered for conducting the activities supported by these forms. Consequently, managers are left to their own devices in most areas of workforce management.

Low maturity organizations implicitly assume that management skill is either innate or is acquired by observing other managers. However, if managers are inconsistent in managing their people, nascent managers will be learning from inconsistent role models. Management capability should ultimately be defined as a competency just as other critical skill sets are required by the organization. However, in launching People CMM-based improvements, managers must be held accountable for performing basic workforce practices even though their personal methods for performing them may differ.

Since low maturity organizations rarely clarify the responsibilities of managers, inconsistencies are to be expected. Consequently, how people are treated depends largely on personal orientation, previous experience, and the individual “people skills” of their manager, supervisor, or team leader. While some managers perform their workforce responsibilities diligently, others perform some workforce activities with little forethought and ignore other responsibilities altogether. Studies have consistently shown that one of the major causes for voluntary turnover is related to individual’s relationships with their manager or supervisor.

Managers in low maturity organizations rarely share a common vision about the fundamental responsibilities of management. They perceive management to be about producing results, not about producing people who produce results. Although managers in low maturity organizations accept responsibility for the performance of their unit, many do so without understanding how to manage the collective performance of those in the unit. In particular, they often lack skill and place little emphasis in evaluating and improving the capability and performance of those who report to them.

Many managers in low maturity organizations consider workforce activities to be administrivia—something less than the real work of managers. As a consequence of this attitude, workforce activities such as performance appraisals and job candidate interviews are often performed hastily without adequate preparation. Responsibility for other workforce practices such as recruiting for open positions and identifying training needs are displaced to Human Resources or other staff groups. This displacement reflects a refusal to accept personal responsibility for the capability of the unit or the people in it. These actions are characteristic of managers who have not been properly prepared for their responsibilities in managing people.

4.2. Maturity Level 2 (The Managed Level)

At the second level of maturity, organizations must establish a foundation on which they can deploy common processes across the organization. Before being able to successfully implement many advanced practices, management must first establish a stable environment in which to perform professional work. They must ensure that people are not constantly rushing about pell-mell, cutting corners, making mistakes from hasty work, and fighting the fires that characterize over-committed organizations. Until basic management control is established over daily work, no organization-wide practices have any chance of being deployed successfully since no one has the time to master them. The primary objective of a level 2 environment is to enable people to repeat practices they have used successfully in the past. To enable this repeatability, managers must get control of commitments and baselines. The effort to establish a repeatable capability is the effort to establish basic management practices locally within each unit or project. Only when this management discipline is established will the organization have a foundation on which it can deploy common processes.

To achieve the Managed Level, Maturity Level 2, managers begin performing basic people management practices such as staffing, managing performance, and making adjustments to compensation as a repeatable management discipline. The organization establishes a culture focused at the unit level for ensuring that people are able to meet their work commitments. In achieving Maturity Level 2, the organization develops the capability to manage skills and performance at the unit level. The process areas at Maturity Level 2 are Staffing, Communication and Coordination, Work Environment, Performance Management, Training and Development, and Compensation. These six process areas are briefly described as follows:

4.2.1. Staffing

The purpose of Staffing is to establish a formal process by which committed work is matched to unit resources and qualified individuals are recruited, selected, and transitioned into assignments. Staffing is positioned as the primary process area at Maturity Level 2 since staffing decisions provide an organization’s greatest opportunities to influence performance. All other practices designed to improve the capability of the workforce must start from the baseline of talent brought into positions within the organization. Managers balance the unit’s work commitments with its available staff, since few organizational processes are able to demonstrate their potential benefits in organizations that are chronically overworked. Managers take responsibility for recruiting talent for open positions and they coordinate with organizational recruiting activities, both internally- and externally-focused. A formal selection process is developed to ensure thorough and fair evaluation of the skills and other qualifications of each candidate. Mechanisms are established for transitioning people into new positions, among assignments, or if necessary, out of the organization.

4.2.2. Communication and Coordination

The purpose of Communication and Coordination is to establish timely communication across the organization and to ensure that the workforce has the skills to share information and coordinate their activities efficiently. Communication and Coordination establishes the initial basis for developing and empowering workgroups. This process area establishes a culture for openly sharing information and concerns across organizational levels and among dependent units. Prior to having the defined processes that aid the development of workgroups at Maturity Level 3, workgroup performance depends on people having the skills required to coordinate their activities and manage shared dependencies. Prior to the availability of defined processes, the interpersonal communication and coordination skills need to be developed to provide a foundation for the structured development of workgroups at higher levels.

4.2.3. Work Environment

The purpose of Work Environment is to establish and maintain physical working conditions and to provide resources that allow individuals and workgroups to perform their tasks efficiently without unnecessary distractions. The work environment must be managed to ensure it supports the committed work of those in the organization. This process area focuses on both the resources provided for performing work, and the physical conditions under which the work is performed. Management must balance expenditures on resources and environment with justifications based on the work being performed. Managers monitor resource needs and environmental conditions that affect their unit and mitigate those problems judged to present serious risks to health, safety, or efficiency.

4.2.4. Performance Management

The purpose of Performance Management is to establish objectives related to committed work against which unit and individual performance can be measured, to discuss performance against these objectives, and to continuously enhance performance. The primary focus of performance management is on the continual discussion about the performance of work to identify ways to improve it. Discussions of performance focus not only on the individual, but also on work processes, resources, and any other issues that can be addressed to improve performance. The discussion of performance occurs in the context of measurable objectives those individuals or workgroups are trying to achieve in their work. These objectives are linked to committed work. The role of performance appraisal is primarily to record the results of performance for use as input to decisions about adjustments to compensation, personal development planning, staffing, promotion, and other workforce activities. Performance problems are managed and outstanding performance is recognized.

4.2.5. Training and Development

The purpose of Training and Development is to ensure that all individuals have the skills required to perform their assignments and are provided relevant development opportunities. The primary focus of Training and Development is on removing the gap between the current skills of each individual and the skills required to perform their assignments. Each unit develops a training plan to ensure that all individuals have the skills required by their assignment. Once individuals have the necessary skills to perform current assignments, they may focus their development activities on other objectives.

4.2.6. Compensation

The purpose of Compensation is to provide all individuals with remuneration and benefits based on their contribution and value to the organization. The organization must formulate a compensation strategy that motivates and rewards the skills and behaviors the organization considers vital to its success. Compensation represents the only process area at the Managed Level whose execution is coordinated by actions at the organizational level. Compensation must be coordinated primarily through centralized activity in order to establish a sense of equity in the system. Once the workforce perceives the system to be equitable, it can be adjusted to motivate the development of needed skills and better alignment of individual performance with that of the workgroup, unit, or organization. Periodic adjustments to compensation are reviewed to ensure they are equitable and consistent with the organization’s strategy and plan.

4.3. Maturity Level 3 (The Defined Level)

At the third level of maturity, the organization identifies its best practices and integrates them into a common process. Once people are able to perform their work at the Repeatable Level using practices they have found to work, the organization has the ability to identify which practices work best in its unique environment. These practices are documented and integrated into a common process that is then trained to the entire organization. Measures of the critical practices in this process are defined and collected into repository for analysis. When the organization defines a standard process for performing its business activities, it has laid the foundation for a professional culture. Most organizations report the emergence of a common culture as they achieve Level 3. This culture is based on common professional practices and common beliefs about the effectiveness of these practices.

To achieve the Defined Level, Maturity Level 3, the organization identifies and develops the knowledge, skills, and process abilities that constitute the workforce competencies required to perform its business activities. The organization develops a culture of professionalism based on well-understood workforce competencies. In achieving Maturity Level 3, the organization develops the capability to manage its workforce as a strategic asset. The process areas at Maturity Level 3 are Competency Analysis, Workforce Planning, Competency Development, Career Development, Competency-Based Practices, Workgroup Development, and Participatory Culture. These seven process areas are briefly described in the follows:

4.3.1. Competency Analysis

The purpose of Competency Analysis is to identify the knowledge, skills, and process abilities required to perform the organization's business activities so that they may be developed and used as a basis for workforce practices. The organization maintains descriptions of knowledge, skills, and process abilities composing each workforce competency in a repository. These descriptions are periodically reassessed to ensure they remain current with the organization's technologies and business activities. The work processes used by capable individuals in each workforce competency are defined and updated as necessary. Competency information regarding an individual's capability in the workforce competencies relevant to their work or career is collected and maintained. From this competency information, resource profiles of the organization's level of capability in each of its workforce competencies can be determined.

4.3.2. Workforce Planning

The purpose of Workforce Planning is to coordinate workforce activities with current and future business needs at both the organizational and unit levels. Workforce Planning ties the organization's workforce activities directly to its business strategy and objectives. Through workforce planning, the organization identifies the workforce it needs for its current and future business activities and plans the actions to be taken to ensure the required workforce is available when needed. Strategic workforce plans provide those responsible for workforce activities in units with a reference for ensuring that they perform their responsibilities with an understanding of how the unit's workforce activities contribute to the business.

4.3.3. Competency Development

The purpose of Competency Development is to constantly enhance the capability of the workforce to perform their assigned tasks and responsibilities. The workforce competencies identified in Competency Analysis and the needs identified in Workforce Planning provide the foundations for the organization's competency development program. Graduated training and development opportunities are designed to support development in each of the organization's workforce competencies. Individuals actively pursue competency development opportunities that support their individual development objectives. The organization uses the existing experience in its workforce as an asset for developing additional capability in each of its workforce competencies through practices such as mentoring. Mechanisms are established to support communication among the members of a competency community.

4.3.4. Career Development

The purpose of Career Development is to ensure that individuals are provided opportunities to develop workforce competencies that enable them to achieve career objectives. A personal development plan is created and periodically updated for each individual. Opportunities for training and other career-enhancing activities are made available. Progress against individual development plans is tracked. Graduated career opportunities and promotion criteria are defined to motivate growth in the organization's workforce competencies. Promotion activities are performed on a periodic and event-driven basis. Individuals are periodically counseled about career options, and opportunities for advancement are communicated to them.

4.3.5. Competency-Based Practices

The purpose of Competency-Based Practices is to ensure that all workforce practices are based in part on developing the competencies of the workforce. The staffing, performance management, compensation, and related workforce practices established through performing the activities of process areas at the Managed Level need to be adjusted to support the organization's focus on developing workforce competencies. Workforce activities that had focused primarily on unit concerns at the Managed Level are re-oriented by adjusting them to include concerns that are strategic to shaping the organization's workforce and the workforce competencies needed in the workforce. As a result of incorporating an organizational orientation in the performance of workforce activities, the performance of activities should become more consistent across units.

4.3.6. Workgroup Development

The purpose of Workgroup Development is to organize work around competency-based process abilities. As used in the P-CMM, a workgroup is a collection of people who work closely together on tasks that are highly interdependent to achieve shared objectives. Work and workgroups are designed to maximize the interdependency of tasks within the workgroup and to minimize dependencies with other workgroups. Workgroups tailor competency-based processes for use in planning and performing their business activities. Workgroups tailor the defined roles incorporated in the processes and assign them to workgroup members. Responsible individuals manage workgroup performance and track the status of work. When a workgroup's business activities are complete, it is disbanded using an orderly process that preserves its assets, completes required workforce activities, and ensures appropriate work assignments for each of its departing members.

4.3.7 Participatory Culture

The purpose of a Participatory Culture is to ensure a flow of information within the organization, to incorporate the knowledge of individuals into decision-making processes, and to gain their support for commitments. Establishing a participatory culture lays the foundation for building high-performance workgroups. Establishing a participatory culture begins with providing individuals and workgroups with information about organizational and unit performance and how their performance contributes, in addition to information needed to perform their committed work. Individuals and workgroups use defined processes for making decisions and for resolving conflicts and disputes.

4.4. Maturity Level 4 (The Predictable Level)

At the fourth level of maturity, the organization begins managing its processes through the data that describes its performance. The performance of the organization's critical processes is characterized statistically so that the historical performance of the process can be used to predict and manage its future performance. The premise underlying this quantitative management is that if a well-understood process is repeated you should get essentially the same result. If the result obtained deviates significantly from the organization's experience, the cause needs to be determined and corrective action taken if necessary. Since business processes are now managed by numbers rather than just by milestones, the organization can take corrective action much earlier. When the organization's processes are managed quantitatively, its performance becomes much more predictable. When the organization can characterize the performance of its processes quantitatively, it has profound knowledge that can be used to improve them.

To achieve the Predictable Level, Maturity Level 4, the organization quantifies and manages the capability of its workforce and their competency-based processes, in addition to exploiting the opportunities afforded by defined workforce competencies. The organization creates a culture of measurement and exploits shared experience. At Maturity Level 4, the organization has the capability to predict its performance and capacity for work. The process areas at Maturity Level 4 are Competency Integration, Empowered Workgroups, Competency-Based Assets, Quantitative Performance Management, Organizational Capability Management, and Mentoring. These six process areas are briefly described in the follows:

4.4.1. Competency Integration

The purpose of Competency Integration is to improve the efficiency and agility of interdependent work by integrating the process abilities of different workforce competencies. Competency Integration interweaves different competency-based processes to achieve a seamless process- based interaction among individuals from different competency communities. These integrated competency-based processes provide more tightly interlaced interactions to allow problems among product, service, or work dependencies to be identified and corrected much earlier. Competency Integration involves analyzing work to identify opportunities to integrate the processes used by different workforce competencies. These integrated competency-based processes are defined and work situations are tailored for their use. Workforce practices and activities such as staffing, performance management, compensation, and the work environment are adjusted to support multi-disciplinary work using integrated competency-based processes.

4.4.2. Empowered Workgroups

The purpose of Empowered Workgroups is to invest workgroups with the responsibility and authority for determining how to conduct their business activities most effectively. Empowerment involves delegating responsibility and authority for work results to a workgroup and training its members in the skills and processes required for working in an empowered environment. Empowered workgroups are managed as an entity, rather than as individuals. The work environment is adjusted to support empowered performance by workgroups. Empowered workgroup members accept increasing responsibility for the performance of workforce practices such as recruiting, selection, performance management, reward, training, development, and compensation activities that are appropriate to the structure and function of the empowered workgroup. Workgroup performance and contributions to it are considered in making individual compensation decisions, as well as in recognizing and rewarding outstanding performance.

4.4.3. Competency-Based Assets

The purpose of Competency-Based Assets is to capture the knowledge, experience, and artifacts developed in performing competency-based processes for use in enhancing capability and performance. A competency-based asset captures knowledge, experience, or artifacts developed in performing competency-based processes within an organization. A competency-based asset is a bundle of information or an artifact that has been prepared in standard format and made available for widespread use. As an organizational asset, it becomes a component of one or more workforce competencies. Competency-Based Assets involves encouraging individuals and workgroups to capture and share the information and artifacts developed from performing competency-based processes. Selected bundles of information or artifacts are organized into competency-based assets that can be reused in performing business activities. Workforce practices and activities are adjusted to encourage the development and use of competency-based assets.

4.4.4. Quantitative Performance Management

The purpose of Quantitative Performance Management is to predict and manage the capability of competency-based processes for achieving measurable performance objectives. Individuals and workgroups determine which competency-based processes contribute most to achieving unit objectives and set measurable objectives for the performance of these processes. Committed work is estimated and planned using process performance baselines developed from past performance of the relevant competency-based processes. A quantitative performance management strategy is developed for identifying, measuring, and analyzing the performance of the competency-based processes that most contribute to achieving unit objectives. Performance data are collected and analyzed according to the strategy. The performance of competency-based processes are brought under quantitative control. Corrective actions are taken when the performance of competency-based processes deviates significantly from performance objectives.

4.4.5. Organizational Capability Management

The purpose of Organizational Capability Management is to quantify and manage the capability of the workforce and of the critical competency-based processes they perform. The organization’s capability in a specific workforce competency is assessed from the number of individuals in a competency community and the aggregated level of knowledge, skill, and process ability that they possess. Data regarding competency development trends are defined and collected, and trends are compared to objectives in the strategic workforce plan. The organization evaluates the impact of its workforce practices on capability in each of its workforce competencies. Organizational Capability Management also involves characterizing the process capability of critical competency-based processes through process performance baselines and quantitative performance models. These capability results are used in planning and managing the performance of competency-based processes. The impact of workforce practices on the capability and performance of competency-based processes is quantified and managed and the results of these analyses are used in organizational decisions. The results of these analyses are used in adjusting workforce practices to improve their impact on performance and results.

4.4.6. Mentoring

The purpose of Mentoring is to transfer the lessons of greater experience in a workforce competency to improve the capability of other individuals or workgroups. Mentoring relationships are designed for accomplishing specific objectives. At the Defined Level, mentoring and coaching is informal, and the knowledge and skills imparted by the mentor are defined more by their experience and judgement than by a documented combination of knowledge, skills, and process abilities to be imparted. At Maturity Level 4, mentoring activities are organized around the knowledge, skills, and process abilities to be imparted. Mentoring activities are also used to deploy competency-based assets. Criteria are developed for selecting mentors and those chosen are trained for their assignments.

4.5. Maturity Level 5 (The Optimizing Level)

At the fifth and highest level of maturity, the organization uses its profound, quantitative knowledge to make continuous improvements in its processes. Based on its data, the organization can identify which processes can most benefit from improvement actions. These improvements can involve actions ranging from adjustments to processes to the deployment of new technologies. In addition, the organization uses its data to identify its most persistent defects. The root causes of these defects in are analysed and actions are taken to eliminate their occurrence in the future. Change management becomes a standard organizational process and process improvement becomes perpetual throughout the organization. Since the organization has competent people performing trusted processes, it empowers people throughout the organization to attempt continuous improvements to their work processes and to propose organizational changes for those improvements that would appear to have the broadest benefits.

To achieve the Optimizing Level, Maturity Level 5, everyone in the organization is focused on continuously improving their capability and the organization’s workforce practices. The organization creates a culture of product and service excellence. At Maturity Level 5, the organization continuously improves its capability and deploys rapid changes for managing its workforce. The process areas at Maturity Level 5 are Continuous Capability Improvement, Organizational Performance Alignment, and Continuous Workforce Innovation. These three process areas are briefly described in the follows:

4.5.1. Continuous Capability

The purpose of Continuous Capability Improvement is to provide a foundation for individuals and workgroups to continuously improve their capability for performing competency-based processes. Continuous Capability Improvement involves enterprise-wide support for individuals and workgroups as they focus on improving their capability in the performance of competency- based processes. Individuals focus on the capability of their personal methods for performing competency-based processes. They engage in learning activities to improve their personal work processes. Workgroups focus on improving the capability and performance of their operating processes by continuously improving the integration of the personal work processes performed by workgroup members.

4.5.2. Organizational Performance Alignment

The purpose of Organizational Performance Alignment is to enhance the alignment of performance results across individuals, workgroups, and units with organizational performance and business objectives. Organizational Performance Alignment builds on the analyses of competency-based processes initiated in the Quantitative Performance Management and Organizational Capability Management process areas. Where those analyses focused narrowly on process performance, analyses of performance alignment expand this focus to evaluate how the various components of performance fit together across workgroups, units, and the entire organization. Practices within this process area knit together a complete picture of performance within the organization and how the integration of its various business activities are affected by workforce practices and activities. These analyses allow management to align performance across the entire enterprise and to use workforce activities strategically to achieve organizational business objectives.

4.5.3. Continuous Workforce Innovation

The purpose of Continuous Workforce Innovation is to identify and evaluate improved or innovative workforce practices and technologies, and implement the most promising ones throughout the organization. Responsible individuals are continually encouraged to make improvements to their performance of workforce activities. A group is assigned responsibility for coordinating continuous improvements to the organization’s workforce practices. Recommendations for adopting innovative or improved workforce practices can come as lessons learned while improving the performance of workforce activities, suggestions from the workforce, or as analyses of best practices at other organizations. The most promising innovations are evaluated in trial use and, if successful, are implemented across the organization. The effectiveness of these improved practices is evaluated quantitatively and the results are communicated to the workforce.

Part Four: Performance Measures

1. Performance Appraisal

Performance Appraisals is the assessment of individual's performance in a systematic way. It is a developmental tool used for all round development of the employee and the organization. The performance is measured against such factors as job knowledge, quality and quantity of output, initiative, leadership abilities, supervision, dependability, co-operation, judgment, versatility and health. Assessment should be confined to past as well as potential performance also. The second definition is more focused on behaviors as a part of assessment because behaviors do affect job results.

1.1. Objectives of Performance Appraisal

Performance Appraisal can be done with following objectives in mind:

- To maintain records in order to determine compensation packages, wage structure, salaries raises, etc.
- To identify the strengths and weaknesses of employees to place right men on right job.
- To maintain and assess the potential present in a person for further growth and development.
- To provide a feedback to employees regarding their performance and related status.
- To provide a feedback to employees regarding their performance and related status.
- It serves as a basis for influencing working habits of the employees.
- To review and retain the promotional and other training programs.

1.2. Advantages of Performance Appraisal

It is said that performance appraisal is an investment for the company which can be justified by following advantages:

- Promotion: Performance Appraisal helps the supervisors to chalk out the promotion programs for efficient employees. In this regards, inefficient workers can be dismissed or demoted in case.
- Compensation: Performance Appraisal helps in chalking out compensation packages for employees. Merit rating is possible through performance appraisal. Performance Appraisal tries to give worth to a performance. Compensation packages which includes bonus, high salary rates, extra benefits, allowances and pre-requisites are dependent on performance appraisal. The criteria should be merit rather than seniority.

- Employees Development: The systematic procedure of performance appraisal helps the supervisors to frame training policies and programmes. It helps to analyse strengths and weaknesses of employees so that new jobs can be designed for efficient employees. It also helps in framing future development programmes.
- Selection Validation: Performance Appraisal helps the supervisors to understand the validity and importance of the selection procedure. The supervisors come to know the validity and thereby the strengths and weaknesses of selection procedure. Future changes in selection methods can be made in this regard.
- Communication: For an organization, effective communication between employees and employers is very important. Through performance appraisal, communication can be sought for in the following ways:

  -Through performance appraisal, the employers can understand and accept skills of subordinates.

  -The subordinates can also understand and create a trust and confidence in superiors.

  -It also helps in maintaining cordial and congenial labor management relationship.

  -It develops the spirit of work and boosts the morale of employees.

  All the above factors ensure effective communication.
- Motivation: Performance appraisal serves as a motivation tool. Through evaluating performance of employees, a person's efficiency can be determined if the targets are achieved. This very well motivates a person for better job and helps him to improve his performance in the future.

1.3. Disadvantages of performance appraisal

While the original Performance Appraisal was born with worthy intentions, it has morphed into what is now perceived by many as the new "workplace tyranny." According to Coens & Jenkin's book "Abolishing Performance Appraisals", the appraisal system no longer accomplishes the intended goals, drives an overburdening bureaucracy, and worst of all a real fear amongst employees.

The authors claim that performance appraisal don't fail because of the poor design of the process or poor execution, they fail because the underlying assumptions are defective. Some of these underlying assumptions are:

Assumption: One process can effectively serve all intended appraisal functions for all employees.

Defect: Different people, situations, and teams require different processes and styles to enhance performance.

Assumption: Managers are responsible for employee feedback, development, and performance.

Defect: Empowerment is promoted as an organizational value yet the supervisor, not the employee, is the driver of feedback and improvement.

Assumption: Ratings are motivating and let people know where they stand.

Defect: Ratings are not motivating because everyone expects to be rated highly and have their efforts appreciated. Receiving unsatisfactory ratings (and for some, even satisfactory ratings) causes disengagement and demotivation.

Assumption: Feedback and performance improvement are annual (or quarterly) events.

Defect: Feedback should be available continuously at all times and not a calendar-driven event. A culture that encourages everyone to seek feedback when needed should be promoted.

Assumption: People withhold effort if they feel they are not being extrinsically rewarded.

Defect: Research shows that extrinsic rewards can actually cause more harm than good and can kill intrinsic motivation. Focusing on creating meaning and joy at work unleashes intrinsic motivation.

Appraisals do not motivate us and destroy human spirit. It's subjective, formal, forced, untimely, and extrinsically focused approach for motivation does not get us committed to organizational goals. So what can we do instead? The authors claim that we need to decouple the different functions of the appraisal and focus on creating new empowering processes to meet each function, such as:

Improvement: focus on improving performance at a team or organization level by making company goals visible and aligning everyone to company objectives.

Coaching & Guidance: drop mandated ratings and evaluations to allow supervisors to partner with employees and mentor them on a continuous basis.

Feedback & Communication: Create a culture where everyone is responsible for gathering their own feedback whenever they need it from whoever they trust, without worrying that it would be stored in the employment files.

Compensation: Pay people fairly based on market rates and get their focus away from pay. Work on creating an environment where people get meaning and joy from what they do.

Staffing Decisions: Partner with people to implement career management and development programs that are executed in a supportive environment.

Termination and Legal: Deal with poor performers separately and find the best counselling method based on the employee and the situation. Coach the employee in or out of the organization gracefully. This will also lower chances of terminated employees filing lawsuits.

There are many types of performance appraisal methods. Some of them are :

1) Job results
2) essay method
3) Ranking
4) Forced Distribution
5) Graphic Rating Scale
6) Behavioral Checklist
7) Behavioral Anchored Rating Scales (BARS)
8) Management by Objectives (MBO)

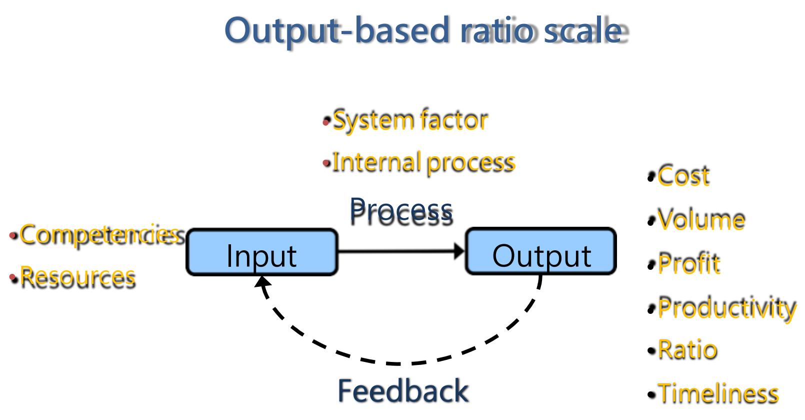
2. Job Results

Though not an appraisal method per se, job results are in themselves a source of data that can be used to appraise performance. Typically, an employee's results are compared against some objective standard of performance. This standard can be absolute or relative to the performance of others.

Results indexes are often used for appraisal purposes if an employee's job has measurable results. Examples of job results indexes are dollar volume of sales, amount of scrap, and quantity and quality of work produced. When such quantitative results are not available, evaluators tend to use appraisal forms based on employee behaviors and/or personal characteristics.

In some cases, appraisals may focus on results rather than behaviors. This is especially true where job content is highly variable, as in many managerial positions, thus making it difficult to specify appropriate behaviors for evaluative purposes. Results indexes such as turnover, absenteeism, grievances, profitability, and production rates can be used to evaluate the performance of organization units.

When we use the output-based scale, the following terms are used: (a) Inputs: all the resources that contribute to the production and delivery of outputs. Inputs are "what we use to do the work". They include competencies and resources.



Job Results

Source: Smither, J.W. & London, M. (2009). Performance Management: Putting Research into Action. San Francisco, CA: Pfeiffer.

2.1. Process:

The activities or actions that use a range of inputs to produce the desired outputs and ultimately outcomes. In essence, process describe “what we do". However, the external factors may affect the internal process and its ability to pursue a given output. The external factors includes a wide variety of needs and influences that can affect the organization, but which the organization cannot directly control. Influences can be political, economic, ecological, societal and technological in nature.

2.2. Outputs:

The final products, or goods and services produced for delivery. Outputs may be defined as "what we produce or deliver”, such as cost, volume, profit, productivity, ratio, or timeliness. The outputs collectively contribute to one or more outcomes and impacts. Outputs are considered as short-term results because they occur immediately after the activity has ended. On the contrary, outcomes are results that occur after a certain period has elapsed. Output enables organization to find outcomes, but without outcomes, there is no need for outputs.

2.3. Feedback

Feedback is having the outputs of work communicated to the employee, work group, or company. For an individual employee, performance measures create a link between their own behavior and the organization's goals. For the organization or its work unit's performance measurement is the link between decisions and organizational goals. Fundamentally, feedback and management-employee communication can serve as a guide in job performance . Specifically, feedback should help the ratees answer the following questions: What would you do to correct or refine the product or project? What would you do differently? What problems did you encounter that you did not find a solution for? What limitations did you materials or programs present?

3. Essay Method

The essay method involves an evaluator's written report appraising an employee's performance, usually in terms of job behaviors and/or results. The subject of an essay appraisal is often justification of pay, promotion, or termination decisions, but essays can be used for developmental purposes as well.

Since essay appraisals are to a large extent unstructured and open-ended, lack of standardization is a major problem. The open-ended, unstructured nature of the essay appraisal makes it highly susceptible to evaluator bias, which may in some cases be discriminatory. By not having to report on all job-related behaviors or results, an evaluator may simply comment on those that reflect favorably or unfavorably on an employee. This does not usually represent a true picture of the employee or the job, and content validity of the method suffers.

Critical incident technique: Under this method, the manager prepares lists of statements of very effective and ineffective behavior of an employee. These critical incidents or events represent the outstanding or poor behavior of employees on the job. The manager maintains logs on each employee, whereby he periodically records critical incidents of the workers behavior. At the end of the rating period, these recorded critical incidents are used in the evaluation of the workers' performance. An example of a good critical incident of a sales assistant is the following:

July 20 – The sales clerk patiently attended to the customers complaint. He is polite, prompt, enthusiastic in solving the customers' problem.

On the other hand the bad critical incident may appear as under:

July 20 – The sales assistant stayed 45 minutes over on his break during the busiest part of the day. He failed to answer the store manager's call thrice. He is lazy, negligent, stubborn and uninterested in work.

This method provides an objective basis for conducting a thorough discussion of an employee's performance. This method avoids recency bias (most recent incidents get too much emphasis). This method suffers however from the following limitations:

Negative incidents may be more noticeable than positive incidents.

The supervisors have a tendency to unload a series of complaints about incidents during an annual performance review session.

It results in very close supervision which may not be liked by the employee.

The recording of incidents may be a chore for the manager concerned, who may be too busy or forget to do it.

Most frequently, the critical incidents technique of evaluation is applied to evaluate the performance of superiors rather than of peers of subordinates.

Checklists and weighted checklists: Another simple type of individual evaluation method is the checklist. A checklist represents, in its simplest form, a set of objectives or descriptive statements about the employee and his behavior. If the rater believes strongly that the employee possesses a particular listed trait, he checks the item; otherwise, he leaves the item blank. A more recent variation of the checklist method is the weighted list. Under this, the value of each question may be weighted equally or certain questions may be weighted more heavily than others. The following are some of the sample questions in the checklist.

Is the employee really interested in the task assigned? Yes/No

Is he respected by his colleagues (co-workers) Yes/No

Does he give respect to his superiors? Yes/No

Does he follow instructions properly? Yes/No

Does he make mistakes frequently? Yes/No

A rating score from the checklist helps the manager in evaluation of the performance of the employee. The checklist method has a serious limitation. The rater may be biased in distinguishing the positive and negative questions. He may assign biased weights to the questions. Another limitation could be that this method is expensive and time consuming. Finally, it becomes difficult for the manager to assemble, analyze and weigh a number of statements about the employee's characteristics, contributions and behaviors. In spite of these limitations, the checklist method is most frequently used in the employee's performance evaluation.

4. Forced-Choice Rating

4.1. Forced choice method

This method was developed to eliminate bias and the preponderance of high ratings that might occur in some organizations. The primary purpose of the forced choice method is to correct the tendency of a rater to give consistently high or low ratings to all the employees. This method makes use of several sets of pair phrases, One or two of which may be positive and the other one or two negative and the rater is asked to indicate which of the four phrases is the most and least descriptive of a particular worker. Actually, the statement items are grounded in such a way that the rater cannot easily judge which statements apply to the most effective employee. The following box is a classic illustration of the forced choice items in organizations.

Forced-Choice rating scale

Rater Instructions: for each of the following two items, please indicate which behavior if most typical of the instructor’ s behavior

1. a. Presentations were of excellent quality.
   b. The meetings held my interest and attention.
2. a. The instructor was able to get cooperation and attention.
   b. The instructor used class well.

Source: Smither, J.W. & London, M. (2009). Performance Management: Putting Research into Action. San Francisco, CA: Pfeiffer.

4.2. Mixed Standard Scales

Mixed standard scales are a relatively recent innovation in rating scales. They contain statements representing good, average, and poor performance based on behavioral examples obtained from knowledgeable persons, usually supervisors. An evaluator's task is to indicate whether an employee either fits the statement, is better than the statement, or worse than the statement.

In a mixed standard scale, each performance dimension has three statements relating to it: one illustrating good performance, one average, and one poor. Thus, this mixed standard scale has nine statements, three for each of the three dimensions used. Statements in mixed standard scales are randomly mixed, tending to reduce rater errors by making it less obvious which statements reflect effective or ineffective performance.

Example of a mixed standard scale
Instructions: If the employee fits the statement, put a “o” in the space opposite the statement. If the employee is better than the statement, put a “+”. If the employee is

worse than the statement, put a "-".

Mixed standard scale

Behaviors	Superior	Average	Inferior	Rating
1	+	+	+	7
2	-	o	+	4
3	o	+	+	6
4	-	-	o	2

Source: Smither, J.W. & London, M. (2009). Performance Management: Putting Research into Action. San Francisco, CA: Pfeiffer.

- Is on good terms with everyone. Can get along with people even in disagreement.
- Employee's work is spotty, sometimes being all right and sometimes not. Could be more accurate and careful.
- Has a tendency to get into unnecessary conflicts with people.
- Is quick and efficient, able to keep work on schedule. Really gets going on a new task.
- The accuracy of employee's work is satisfactory. It is not often that you find clear evidence of carelessness.
- Gets along with most people. Only very occasionally has conflicts with others on the job, and these are likely to be minor.
- Is efficient enough, usually getting through assignments and work in reasonable time.
- Work is striking in its accuracy. Never any evidence of carelessness in it.
- There is some lack of efficiency on employee's part. Employee may take too much time to complete assignments, and sometimes does not really finish them.

5. Ranking and Forced Distribution

There are two similar method which may make some confusion. We will explain what Ranking and Forced Distribution are.

Straight ranking

Employee	Ranking
X1	1
X2	2
X3	3

Alternative ranking

Ranking	Employee
1	X1
2	X3
3	X2

Paired comparison

Compared	X1	X2	X3
X1	--	X	X
X2	V	--	X
X3	V	V	--
Rating	2	1	0
Ranking	1	2	3

Forced distribution

Ranking	Percentage	Employee
1	20% (A)	X1
2	60% (B)	X2, X3, X4
3		
4		
5	20% (C)	X5

Source: Smither, J.W. & London, M. (2009). Performance Management: Putting Research into Action. San Francisco, CA: Pfeiffer.

5.1. Ranking

Ranking methods compare one employee to another, resulting in an ordering of employees in relation to one another. Rankings often result in overall assessments of employees, rather than in specific judgments about a number of job components. **Straight ranking** requires an evaluator to order a group of employees from best to worst overall or from most effective to least effective in terms of a certain criterion. **Alternative ranking** makes the same demand, but the ranking process must be done in a specified manner (for example, by first selecting the best employee in a group, then the worst, then the second-best, then the second-worst, etc.).

Comparative evaluation systems such as ranking are rarely popular. No matter how close a group of employees is in the level of their performance, and no matter how well they perform on the job, some will rank high and some will end up at the bottom. Evaluators are often reluctant to make such discriminations. Also, rankings are unable to compare employees across different groups. For example, it is difficult to say whether the second-ranked employee in unit A is as good as or better than the second-ranked employee in unit B. Despite the problems of ranking methods, if an organization has a very limited number of promotions or dollars to allocate, rankings can be very useful in differentiating among employees.

Within this system exist several comparative methods, which are as follows:

5.1.1. Simple or Straight Ranking

The first of these methods is known as 'Simple' or 'Straight' ranking. It works by rating individuals on their performance from best to worst. This particular method assumes that the appraising party is able to make judgments on overall performance without any criteria or benchmarks to guide them. This generally causes ratings to be based more so on opinions, as opposed to actual figures of output, sales or labour turnover.

5.1.2. Alternate Method

The second comparative method is known as the ‘Alternate’, and is similar to the prior in its failings and design. Appraisal is done by listing the best performer first, then the worst last, once this has been done, the second best and worst performers are selected, and placed according. This process Continues until the entire group of subordinates are ranked.

5.1.3. Paired Comparison Method

The third method known as the ‘Paired Comparison’ suffers the same defects as the other two, but allows for slightly more objectivity to be included in comparisons by contrasting two subordinates at a time against all others on a single standard criterion, such as overall performance. Unfortunately, the amount of time taken increases geometrically as the size of the group increases.

5.2. Forced Distribution

Forced distribution is a form of comparative evaluation in which an evaluator rates subordinates according to a specified distribution. Unlike ranking methods, forced distribution is frequently applied to several rather than only one component of job performance.

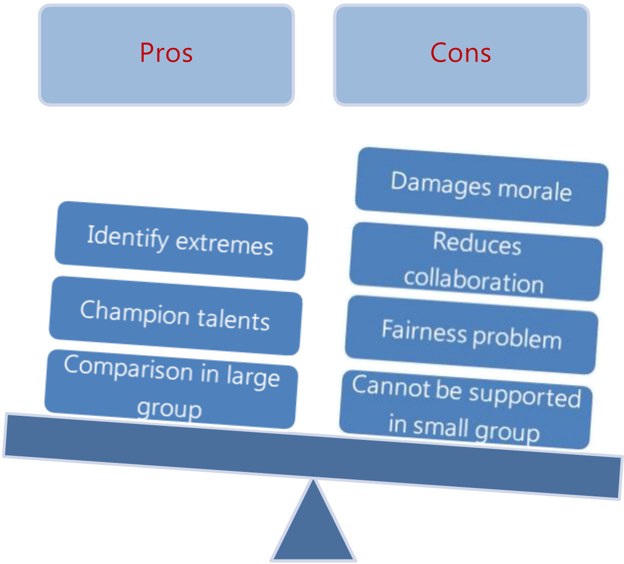
Use of the forced distribution method is demonstrated by a manager who is told that he or she must rate subordinates according to the following distribution: 10 percent low; 20 percent below average; 40 percent average; 20 percent above average; and 10 percent high. In a group of 20 employees, two would have to be placed in the low category, four in the below-average category, eight in the average, four above average, and two would be placed in the highest category. The proportions of forced distribution can vary. For example, a supervisor could be required to place employees into top, middle, and bottom thirds of a distribution.

Forced distribution is primarily used to eliminate rating errors such as leniency and central tendency, but the method itself can cause rating errors because it forces discriminations between employees even where job performance is quite similar. For example, even if all employees in a unit are doing a good job, the forced distribution approach dictates that a certain number be placed at the bottom of a graded continuum. For this reason, raters and ratees do not readily accept this method, especially in small groups or when group members are all of high ability.

5.3. Pros and Cons of Forced Distribution

Forced Distribution aligns employees in accordance with pre-assigned performance-distribution percentages . Other than a person-to-standard comparison, some organization use forced distribution method to rank employee performance from best to worst, called forced ranking.

Proponents and advocates of forced ranking have strong opinions in favor of and against its use. Advocates of forced ranking state that the approach:



Forced Distribution

Source: Smither, J.W. & London, M. (2009). Performance Management: Putting Research into Action. San Francisco, CA: Pfeiffer.

- Creates and sustains a high-performance culture: Involuntary turnover is managed by eliminating weak performers and retaining strong performers.
- Correlates with total return to shareholders: Recent research indicates a strong correlation between companies with strong performance-management processes and three- and five-year total shareholder returns. The research, just being published by Andersen, involves over 200 companies across a wide range of industries. It shows that companies that use individual criteria to assess the performance of employees and managers significantly outperform companies that focus primarily on measuring business-unit or overall company performance. Also, the study shows, companies whose managers are highly skilled at communicating business goals and objectives and providing structured feedback also enjoy higher total shareholder returns.
- Establishes well-defined consequences: Top-performing employees receive substantially larger rewards (i.e., base pay, bonus, options) than the average performers. Those falling at the lower end of the scale typically receive coaching and are on notice to improve performance.
- Makes performance management a corporate priority: With real consequences, performance management takes on renewed meaning.
- Lets employees know where they stand: One of the common complaints from employees is about the lack of feedback on their performance. Forced ranking sends a clear message as to how people stand, or fall.
- Those who are opposed to forced ranking suggest that the process may:

- Be detrimental to morale. We want high-performing workplaces, yet we also want people to enjoy coming to work. Can we have both?
- Emphasize individual performance at the expense of team performance. Employees will be less willing to "pitch in" and help others. Completing individual assignments becomes more important.
- Promote competition. If employees are ranked, will there be less cooperation?

Each organization, through careful analysis, will have to decide if this approach would be beneficial or detrimental for the company. The first two considerations should be:

- What are your performance-management objectives?
- What does your culture value?
- What are your performance-management objectives?

It is interesting to note that the first three objectives -- alignment, objective, repeatable -- do not automatically occur in any system, yet they are key to having an effective process. The remaining objectives -- development, promotions, termination, pay, feedback, and workforce planning -- begin to differentiate a forced-ranking approach from a non-directed (no rating guidelines) approach.

It is possible to meet some of these objectives outside the actual performance-management process. For example, a financial-services firm recently implemented rigorous promotion criteria using a forced-ranking approach. Although there is no formal performance-management process in place, the forced-ranking criteria have become the foundation for officer selection.

Not all cultures will support forced rankings. The five scales to examine are:

Collectivism/Individualism -- Forced ranking doesn't work well for standing teams, where it is important to support each other. For example, a major European retailer's strategy emphasizes teamwork on the sales floor. This enables the associates to fluidly move to where they are most needed. A forced-ranking system would have a detrimental effect on this goal. Alternatively, project teams, in which groups disband, re-form, and are results-oriented, find that forced ranking works extremely well. Product-design teams and professional service teams follow this model.

Reliability/Flexibility -- If quality is the number one issue, consider driving performance through quality improvements instead of forced ranking. A flexible structure applies to project-driven approaches where it is critical that individuals take the initiative. A global provider of information services gives flexibility to their sales staff to customize offerings and provide high-touch service, making a forced-ranking system a viable option.

Activity/Results -- Results-based organizations create increased accountability and use defined performance measures.

Control/Empowerment -- In a highly scripted, controlled environment, setting minimum criteria for performance may be the best approach. Call centers are a classic example of this -- if you have 100 fully trained call center representatives, setting criteria (versus ranking each representative) may be a wiser approach. Organizations that value empowerment also encourage the flexibility and initiative necessary in a high-performance environment.

Functional/Specialized -- Forced ranking works best for companies with similar positions. It will be more difficult for those with hierarchical, functional structures, a large number of positions and titles, small departments, or a limited number of employees.

6. Graphic Rating

Perhaps the most commonly used method of performance evaluation is the graphic rating scale. Of course, it is also one of the oldest methods of evaluation in use. Under this method, a printed form, as shown below, is used to evaluate the performance of an employee. A variety of traits may be used in these types of rating devices, the most common being the quantity and quality of work. The rating scales can also be adapted by including traits that the company considers important for effectiveness on the job. A model of a graphic rating scale is given below:

Graphic rating scales

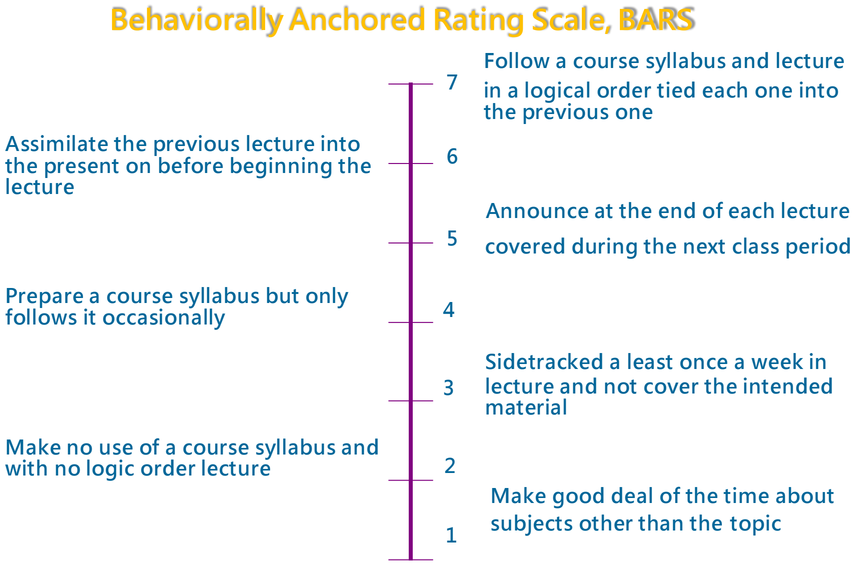
Relative-Skewed Anchors	Relative-Symmetrical Anchors
1 = Below Average 2 = Average 3 = Above Average 4 = Well Above Average 5 = One of the Best	1 = One of the Worst 2 = Below Average 3 = Average 4 = Above Average 5 = One of the Best
Absolute-Skewed Anchors	**Absolute-Symmetrical Anchors**
1 = Marginal 2 = Satisfactory 3 = Good 4 = Very Good 5 = Outstanding	1 = Poor 2 = Marginal 3 = Satisfactory 4 = Good 5 = Outstanding

Source: Smither, J.W. & London, M. (2009). Performance Management: Putting Research into Action. San Francisco, CA: Pfeiffer.

7. Behaviorally Anchored Rating Scale, BARS

Behaviorally anchored rating scales: Also known as the behavioral expectations scale, this method represents the latest innovation in performance appraisal. It is a combination of the rating scale and critical incident techniques of employee performance evaluation. The critical incidents serve as anchor statements on a scale and the rating form usually contains six to eight specifically defined performance dimensions. The following chart represents an example of a sales trainee's competence and a behaviorally anchored rating scale.

Developing a BARS follows a general format which combines techniques employed in the critical incident method and weighted checklist ratings scales. Emphasis is pinpointed on pooling the thinking of people who will use the scales as both evaluators and evaluatees.



Source: Smither, J.W. & London, M. (2009). Performance Management: Putting Research into Action. San Francisco, CA: Pfeiffer.

7.1. Step 1: Collect critical incidents

People with knowledge of the job to be probed, such as job holders and supervisors, describe specific examples of effective and ineffective behavior related to job performance.

7.2. Step 2: Identify performance dimensions

The people assigned the task of developing the instrument cluster the incidents into a small set of key performance dimensions. Generally between five and ten dimensions account for most of the performance. Examples of performance dimensions include technical competence, relationships with customers, handling of paper work and meeting day-to-day deadlines. While developing varying levels of performance for each dimension (anchors), specific examples of behavior should be used, which could later be scaled in terms of good, average or below average performance.

7.3. Step 3: Reclassification of incidents

Another group of participants who are knowledgeable about the job is instructed to retranslate or reclassify the critical incidents generated (in Step II) previously. They are given the definition of job dimension and told to assign each critical incident to the dimension that it best describes. At this stage, incidents for which there is not 75 per cent agreement are discarded as being too subjective.

7.4. Step 4: Assigning scale values to the incidents

Each incident is then rated on a one-to-seven or one-to-nine scale with respect of how well it represents performance on the appropriate dimension. A rating of one represents ineffective performance; the top scale value indicates very effective performance. The second group of participants usually assigns the scale values. Means and standard deviations are then calculated for the scale values assigned to each incident. Typically incidents that have standard deviations of 1.50 or less (on a 7-point scale) are retained.

7.5. Step 5: Producing the final instrument

About six or seven incidents for each performance dimension – all having met both the retranslating and standard deviation criteria – will be used as behavioral anchors. The final BARS instrument consists of a series of vertical scales (one for each dimension) anchored (or measured) by the final incidents. Each incident is positioned on the scale according to its mean value.

Because the above process typically requires considerable employee participation, its acceptance by both supervisors and their subordinates may be greater. Proponents of BARS also claim that such a system differentiates among behavior, performance and results and consequently is able to provide a basis for setting developmental goals for the employee. Because it is job-specific and identifies observable and measurable behavior, it is a more reliable and valid method for performance appraisal.

Researchers, after surveying several studies on BARS, concluded that "despite the intuitive appeal of BARS, findings from research have not been encouraging". It has not proved to be superior to other methods in overcoming rater errors or in achieving psychometric soundness. A specific deficiency is that the behaviors used are activity oriented rather than results oriented. This creates a potential problem for supervisors doing the evaluation, who may be forced to deal with employees who are performing the activity but not accomplishing the desired goals. Further, it is time consuming and expensive to create BARS. They also demand several appraisal forms to accommodate different types of jobs in an organization. In a college, lecturers, office clerks, library staff, technical staff and gardening staff all have different jobs; separate BARS forms would need to be developed for each. In view of the lack of compelling evidence demonstrating the superiority of BARS over traditional techniques such as graphic rating scales. A scholar concluded that: "It may be time to quit hedging about the efficacy of behavioral scaling strategies and conclude that this method has no clear-cut advantages over more traditional and easier methods of performance evaluation".

8. Behavioral Observation Scales, BOS

A technique for evaluating the performance of an employee which can be used as part of the appraisal process. Like behaviorally anchored rating scales, the "Behavioral Observation Scales (BOS)"technique involves a process of identifying the key tasks for a particular job, but the difference is that employees are evaluated according to how frequently they exhibit the required behavior for effective performance. The scores for each of these observed behaviors can then be totaled to produce an overall performance score. In such instances, the various measures of behavior are normally weighted to reflect the relative importance of the measure to the overall job. The instruments of BOS are ordinal scale questionnaires. The question is typically related to the frequency or intensity of the symptom of behavior.

Behavioral Observation Scales, BOS

I. Overcoming Resistance to Change

(1)	Describes the detail of the change to subordinates	Never 1 2 3 4 5 6 Always
(2)	Explains why the change is necessary	Never 1 2 3 4 5 6 Always
(3)	Discusses how the change will affect the employee	Never 1 2 3 4 5 6 Always
(4)	Listen to the employee concerns	Never 1 2 3 4 5 6 Always
(5)	Asks the employee for help in making the change work	Never 1 2 3 4 5 6 Always

Source: Smither, J.W. & London, M. (2009). Performance Management: Putting Research into Action. San Francisco, CA: Pfeiffer.

9. 360 Degree Feedback

"360" refers to the 360 degrees in a circle. The multiple rating sources would come from subordinates, peers, and managers in the organizational hierarchy, as well as self-assessment, and in some cases external sources such as customers and suppliers or other stakeholders. The purpose of the 360 degree performance feedback is to assist each individual to understand his or her strengths and weaknesses, and to contribute insights into aspects of his or her work needing professional development.

- Avoid using 360-degree appraisals for decision
- Tell employees if ratings are being used for decision making
- Help employees interpret and react to the ratings
- Minimize the amount of data presented to employee
- Do not have all raters evaluate ratee in all areas
- Include a formal goal-setting component in the system
- Implement a 360-dgree system regularly
- Evaluate the effectiveness of 360-degree appraisal system

360 Degree Feedback

Source: Lepsinger, R. & Lucia, A.D. (2009). The Art and Science of 360 Degree Feedback 2nd Edition. San Francisco, CA: Pfeiffer.

9.1. Why 360 Degree Feedback

This multi-rater feedback differs from what most employees get in an annual performance review in several ways:

Well-rounded look. Most performance reviews involve the employee getting feedback directly from their manager. While a manager's perspective is invaluable, it's inherently limited. 360-degree feedback involves feedback from many additional sources, providing a well-rounded look at an employee. After all, people may act differently around their boss than around their peers and direct reports.

Forward-looking. While there is some debate on the role of 360s and performance reviews, a general rule of thumb is that performance reviews are evaluative and backward looking – how have employees performed in relation to their goals. In contrast, 360-degree feedback is traditionally non-evaluative and forward-looking – what are employees' strengths and weaknesses, and what developmental steps can help them become even better.

Broader view. Some argue that keeping 360-degree assessments non-evaluative is essential to getting honest feedback. An employee's peers, they'll argue, are much less likely to provide negative or even constructive feedback if they think it will negatively impact someone's bonus or promotion potential.

Simply put, 360-degree multi-rater assessments address important competencies and provide opportunities for managers, peers and direct reports to provide important developmental feedback that they may not otherwise share.

When it comes to measuring valuable employee skills and attributes, few things are as important or effective as 360s. They measure things like leadership, teamwork, communication, decision-making and collaboration. Given the continual demands of work, it is easy to get caught up in only looking at how well employees get their jobs done, instead of taking the longer term view to make sure they are developing into the most productive employee they can become. 360s help managers and employees look at competencies that will help make them and their organizations better.

In addition, with more and more Millennials in the workforce, providing regular feedback has never been more important. Millennials want feedback more than any other group. While providing ongoing multi-rater feedback is important, 360s provide a formalized opportunity for a holistic view of strengths, weaknesses and opportunities for development. The results should be put into action plans to give employees the tools they need to develop into better employees.

Traditionally, 360s have been limited to the top leadership at a company. But the tides are shifting. Organizations are beginning to recognize the need to develop all of their employees and they're using 360s as an integral part of their employee development plans. As previously noted, Millennials want feedback – and they don't want to wait until they are senior managers to get it.

Technology is making it easier, faster and more affordable to deliver 360 feedback than ever before. More organizations are choosing to provide this feedback and the associated development opportunities for all of their employees, from the C-level to entry level. It goes along with the fabled conversation between the CEO and the CFO. The CFO asks, “What if we train all our people and they leave the company?” To which the CEO responds, “What if we don’t and they stay?”

360-degree employee assessments are important to organizations, managers, and employees. Managers benefit from having the opportunity to get feedback from a variety of sources which both helps them improve and allows them to help their employees learn how they can capitalize on their strengths and improve where they are weak. Employees benefit because, for the most part, they are eager to improve and want feedback. And the organization as a whole benefits because 360s foster a culture of feedback and continuous improvement that leads to a stronger, more engaged workforce.

9.2. Why 360 Degree Feedback Failed

There are commonalities in the successes stories and in the failures. Most organizations using the best practices anticipate potential mistakes and plan actively how to avoid them. You want to make sure to address the pitfalls before embarking on your own 360-degree process. The successful implementation depends on whether it truly addresses and is perceived to address, important performance issues in your organization. When done well, multi-rater feedback systems can lead to enormous positive change and enhance effectiveness at the individual, team, and organizational levels. Here are 13 common mistakes to avoid when implementing a multi-rater assessment:

9.2.1. Mistake l: Having no clear Purpose

One of the main reasons for the unsuccessful implementation of a 360-degree feedback process is the lack of a clear purpose. The feedback doesn’t address an organizational performance issue or strategic need. Instead it’s being done because it’s the latest management trend, because a senior manager thinks it’s a good idea, or because a recent benchmarking study reports that word-class organizations are doing it. Many organizations use 360 degree systems trying to address specific performance issues and problems. Similarly, training and performance improvement consultants, in their never-ending search for the latest cutting-edge tools, may unwittingly recommend interventions that appear exciting, without regard to whether they fit the culture of the organization or address important needs.

Performing an intervention without a clear purpose is like prescribing an antibiotic for a virus; it doesn’t treat the underlying problems and may lead to undesirable outcomes. Multi-rater interventions can be powerful. They should be designed and implemented to address specific business and strategic needs. For example, managers may need to enhance the critical competencies for competitive performance, based on feedback from multiple internal and external stakeholders. Or people may be operating “in a vacuum” and need to open channels of feedback to be able to serve customers better. Or the compensation and reward systems may be outdated and 360-degree feedback may be a way to bring about actual or symbolic change. Or the organizational hierarchy may have become rigid and360-degree feedback is a way to develop a different culture that emphasizes continuous feedback and improvement.

Whatever the needs, it's imperative to have a clear and well-defined understanding or contract with employees on why the organization's undertaking a 360-degree feedback process. Ideally, the process should be designed for a specific purpose (for example, management development, succession planning, performance management, coaching, or career development). It shouldn't be to meet the needs of often conflicting human resource systems. It's also a poor idea to use 360 feedback just because other organizations are doing it or you've been given a green light by a self-diagnosing client who'd like to give it a try. That generality results in an intervention that misses the mark, which can undermine any future events to use a 360-degree process when organizational conditions may be more conductive.

9.2.2. Mistake 2: Using it as a substitute

Multi-rater feedback isn't a substitute for managing a poor performer. It's a process for helping people gain a rich, accurate perspective on how others view their management practices, interpersonal style, and effectiveness .It shouldn't take the place of managers assessing and managing people's performance. Managers can be tempted to use 360 feedback to facilitate a behavior change in poor performers. They may think it can motivate them to improve, based on the feedback they get. Rather than manage employee's performance day-to-day, they see multi-rater feedback as a panacea. It's not uncommon to hear managers murmuring, "If I only had an objective way to deliver constructive feedback to employees, I'd be able to manage their performance better." Although feedback delivery from a 360-degree process can stimulate an employee's self-awareness, it can't replace direct communication between that employee and his or her manager.

When you see managers substituting 360-degree feedback or some other performance improvement tool for effective management, call it to their attention. Be sure not to collude with them, in an attempt to avoid unpleasant, but necessary management tasks. Ideally a training or performance improvement consultant can encourage managers to make feedback an ongoing, day-to-day process that contributes to keeping an organization healthy-instead of a once-a-year event that managers must check off their to-do lists.

In addition to the one-time benefits of exchanging feedback, it's also a way to get people accustomed to living in a feedback-rich environment. In high-performing teams, exchanging performance feedback is encouraged. It's important to remember that managers are responsible for confronting under-performance or inappropriate behavior in a constructive way. Although others' feedback can be valuable, it's no substitute for managers establishing and communicating performance goals or for tracking performance towards achieving those goals. Managers must be willing to confront unacceptable behavior and manage poor performers on an ongoing basis. They should provide feedback to their staff on an as-needed basis, without relying on a 360- degree feedback system as a replacement for performance management. They're unlikely to get people to change unless they give them timely, specific, and useful feedback to correct undesirable or unproductive behavior.

9.2.3. Mistake 3: not conducting a pilot test

There's a danger in being too ambitious too soon when introducing any major change in an organization. Most 360-degree feedbacks systems represent a radical departure from the way people are traditionally given feedback and managed. The concept of upward feedback to a supervisor or manager and collecting information from peers, staff, and customers may be considered radical in top down cultures. Consequently, initiating a culture change of information-sharing shouldn't be taken lightly. It requires a change in people's mindset and day-today behavior. They have to refocus their energies and rethink who the key stakeholders are. To bring about such a shift in a short time can be hazardous if the appropriate groundwork isn't laid.

Find a stakeholder within the organization who has a strategic business need that can be addressed by using a 360-degree feedback process. Introduce the process on a pilot basis so that it can be evaluated to determine its effectiveness and potential impact on the identified business need. Involve others in the planning, implementation and evaluation to modify the pilot program. Look for ways to integrate the multi-rater process with other HR systems. For example, hold employees accountable for implementing performance development plans that become part of the organization's performance planning and evaluation systems. Build in checkpoints to evaluate progress and collect data to support the effectiveness and success of your 360-degree process.

9.2.4. Mistake 4: Not involving key stakeholders

It's important to involve key stakeholders in the design and implementation of a 360-degree process. They need to be aware of important decisions and the rationale behind them. They should provide input to such decisions and assist with the implementation. Many performance improvement consultants have battle scars from the change efforts that got throttled because certain key players weren't included. Those key people either withheld their support or actively sabotaged the effort. Despite the idealism of most performance improvement consultants and others involved in organizational change, there are usually winners and losers. That's particularly true of 360-degree feedback interventions. Feedback has the power to enhance or diminish people's reputations. The more that accountability and information-sharing are built into the process, the more important it is for stakeholders to participate.

First, identify the key stakeholders. Get them involved and keep them informed. Stakeholders can be senior managers, the intended recipients of 360-degree feedback, their immediate supervisors or managers, and the potential providers of the feedback –such as staff, peers, team members, and customers. All parties should know the strategic competencies to be measured, the methods for gathering and summarizing the feedback, and how the feedback will be integrated with existing development or evaluation systems. That involvement is critical to ensure people's support and commitment to a fair, objective, and constructive feedback process. A particularly good way to get people involved is to have them help select the survey instrument or help generate specific questions that will measure the targeted competencies. It's important to gain senior management's true commitment and involvement rather than a general blessing. The most potent demonstration of managers' commitment is a willingness to also take part and receive feedback. Ideally, they could be the first group to receive feedback. Accepting it non-defensively and making positive changes can set a positive tone and provide a role model.

9.2.5. Mistake 5: Having insufficient communication

Complete communication is especially important with 360-degree feedback. Given that some feedback can seem threatening, it's important that its purpose be communicated clearly. To avoid potential misunderstanding or feelings of betrayal, it's also essential to communicate clearly about confidentiality issues. The logistics can be complex. Unattended little details can lead to major mishaps. Without making clear who needs to be rating who in what time frame and sorting out the mechanics of processing and issuing feedback, a theoretically smooth process can degenerate into a big, jumbled mess.

Be sure that all stakeholders and other interested parties have thoroughly discussed their concerns before implementation and that, at minimum, they understand the rationale underlying major decisions. Typically, there are judgment calls or unexpected questions that crop up. It helps for people to have come to a consensus about the overall approach before they have to make on-the-spot decisions. Although not one of the most exciting aspects of a 360-degree feedback intervention, the coordination and administration are absolutely critical for success. Overseeing the administration can be a logistical challenge at best and a nightmare at worst.

Regardless of the medium used such as on-line, paper-and-pencil or email, it's important to have clear decisions and a clearly communicated understanding on how the survey instruments will be distributed and processed and how feedback will be routed to people. It's essential to communicate-and communicate-about such major issues as how confidentiality will be safeguarded and what the potential impact of negative feedback might be on someone's career. It's also important to communicate about lesser issues, such as whether written feedback will be transcribed verbatim or summarized and what terms will be used for example, direct reports, team members, or respondents? It' a good practice to develop a written communication plan summarizing the administration, scoring, and overall feedback process. The plan should be shared with all parties.

9.2.6. Mistake 6: Compromising confidentiality

Multi-rater feedback is based on the idea that people can feel safe providing anonymous feedback. It can be a death knell if confidentiality or anonymity is compromised or if there's the perception that it has been compromised.

At the outset, nail down which data is confidential and which is Anonymous. Communicate those decisions clearly. People need to know exactly what will be reported to whom, if they're to speak freely. Be rigorous in enforcing confidentiality agreements. Even though feedback recipients may argue (sometimes with merit) that they can benefit from more information, safe guarding the feedback providers' confidentiality is a greater concern.

9.2.7. Mistake 7: Not making clear the feedback's use

It can cause great confusion if you don't make sure people know whether the feedback will be used for evaluation or development purposes. Some organizations use 360 degree feedback strictly as a development tool, and there are no repercussions for people getting negative feedback. Other organizations use 360-degree feedback as a vehicle for performance management, typically as an adjunct to existing systems. Sometimes, 360-degree feedback falls somewhere in between; it's purpose us for development and evaluation.

There are important trade-offs to using 360-degree feedback as a development tool. Don't gloss over that issue just to get on with the process. If you decide to use it for development purposes, be sure to make that clear. If you decide to use it for evaluative purposes, start slowly and move gradually. Whatever the decision, it's ill-advised to change purposes after an intervention has begun.

Some people argue that for feedback to be most effective, it must be purely developmental. Feedback providers have to know there's no pressure for them to be anything but honest and candid, and people will accept feedback more easily when they don't fear retribution. Others argue that if they're to invest a lot of time, effort, and money, it's a waste not to use feedback in employee evaluations.

Both views have merit. An important consideration is which approach is most congruent with an organization's culture. If 360 degree feedback is to be used in evaluation, it's important to make sure people think the rating system is fair. They may worry about undue influence or retribution. That's why it is advisable to start using 360 degree feedback for development only. When the process becomes familiar, people can be held more accountable and feedback can count towards their evaluations. What's most important is that conditions are dear and people know what they are.

9.2.8. Mistake 8: Not giving people sufficient resources

People must have ways to act on the feedback they receive. A recurring problem is that people don't know what to do with the feedback they get. Insight isn't enough; people need guidelines-such as individual coaching, training, or self-study-for taking action. Many people don't know how to address issues they've been made aware of, often out of the blue. That's especially true when the issues are interpersonal or psychological and people aren't inclined to think along those lines.

Give people the tools to use feedback productively. The way it's delivered can have a big impact on how constructively people will use it. One way to deliver feedback is one-on-one with a trained professional who can explain and clarify the feedback and also deal with people's emotional reactions to disturbing information. Another approach is to provide feedback in a group setting with a supportive climate. After receiving feedback, people can benefit further from training, books, and other resources. If feasible, it's good to provide people with mentoring, coaching, job rotation, or changes in their work conditions so they can develop needed skills.

When possible you should design the mechanisms for facilitator transfer of learning from a multi-rater intervention at the frontend. For example, you can hold participants accountable for completing a development plan and discussing the plan with their managers at the end of the feedback process. Or you can encourage or require people to share their development plans with their staff or feedback providers.

9.2.9. Mistake 9: Not clarifying who “owns” the feedback

Questions about access to and ownership of data are fraught with difficulties. When feedback is used for development people can feel less empowered if they don’t own their data and if they don’t have control over who gets to see it, and when and how that happens. When feedback is used for evaluative purposes, participants clearly don’t own the data. They feel even more lack of control if they weren’t fully informed or didn’t take part in the initial decision making on how data would be handled. It’s bad when participants are subject to surprises about who sees the data and for what purposes it will be used. The worst case is when people are led to believe one thing and the situation changes after the process has begun.

To the extent possible, give people control over their own data. In a 360-degree process used for development, people will feel most empowered if they get to choose exactly when and with whom they share their feedback. That doesn’t mean taking a laissez-faire, hands-off approach. Provide guidance on the best ways to share data so that it’s constructive for everyone. It’s also important not to exert subtle, unstated pressure to get people to share data when that may not be in their best interest.

If the feedback process is evaluative, it takes on more significance. When the process is incorporated into the performance management system, the organization owns the data, not the individuals. Within that context, however, there are still ways to give people control. If their views are considered in the design of the process and they’re kept well informed throughout, they’re less likely to feel that something is being done to them. Beyond being a matter of respect and dignity, it’s also a question of fairness that people know exactly who has access to their feedback, how it will be treated, and what the potential ramifications are for their careers.

9.2.10. Mistake 10: Having “unfriendly” administration and scoring

The administration and scoring of any 360-degree feedback process should be user-friendly. The process can entail a large and complex set of procedures. Sometimes, it’s obvious who needs to fill out a survey and for whom. For example, if it’s purely upward feedback and the feedback recipient has a manageable number of staff, everyone in his or her group fills out the survey. In other multi-rater systems, the selection of potential respondents can be more complex. For example, sometimes people get to choose who fills out surveys on them, or there may be random procedures for selecting from e pool of eligible raters. Without a good questionnaire and a logical and clearly communicated set of procedures, there’s a danger of introducing a cumbersome, paper-intensive process. In such cases, the response rate may be low and the feedback less accurate because people may not be motivated to complete the survey.

Insist that "user-friendly" be high on the list of criteria when designing a 360 degree process. Spell out who needs to provide feedback to whom. Make sure there are fair, logical, and consistent criteria for selecting respondents. Certain feedback providers may have many surveys to complete. In such cases, a survey especially has to be simple and user friendly so that people don't feel burdened.

People in general don't like to complete a lot of paperwork, especially for HR driven projects. A survey should be clear, make sense to people, and be easy to complete in 10 to 15 minutes at most. Resist the temptation to include every conceivable question measuring every conceivable competency. It's better to err on the side of simplicity than comprehensiveness. Different formats can work, but the most user-friendly surveys typically have items grouped by category, with a 5 or 7 point scale. A survey should have open-ended questions so respondents can comment on topics not covered in the rating scales.

9.2.11. Mistake 11: Linking to existing systems without a pilot

A 360-degree feedback system should not be integrated casually with existing performance management and merit systems. Too often, organizations just patch them together. When a feedback process is new and unfamiliar, people may not treat their ratings of others with the concern for accuracy necessary for such systems to work. Only later, it might be discovered that feedback providers were engaged in a ratings game, which can prevent future trust of multi-rater evaluation. Research suggests that (unless there are considerable precautions) ratings are inflated when they are integrated into pay-for-performance systems compared with ratings used solely for development purposes.

Organizations that have successfully integrated a 360-degree feedback system into their performance management and merit systems usually do a thorough job of piloting and evaluation. Typically a project team involving various stakeholders such as HR, line management, and field staff-is created to design and pilot the new performance management system. It's best to introduce the 360-degree rating system over several years. During the first year performance evaluation and merit increases should be based on traditional performance measures and the 360-degree results used only for development purposes.

That way, people can become comfortable with 360-degree ratings and the kinks can be worked out. It's essential to define relevant, measurable performance competencies and develop an administration process that ensures confidentiality and ease of data collection before implementing the system. It can take several iterations and considerable fine-tuning before the pilot stage is completed. Only then can you proceed confidentiality knowing that the introduction of 360-degree ratings will improve rather than hinder performance management.

9.2.12. Mistake 12: Making it an event rather than a process

As with other training and development interventions, 360-degree feedback systems can be considered flavors of the month to try, taste and discard until something new comes along. Many organizations introduce 360-degree feedback with much fanfare. When resistance, negativity, or a non-supportive executive comes along (perhaps one who personally received some negative feedback) an organization may stop using the intervention with this chorus: “We tried 360-degree feedback and had a bad experience.” Without follow-up, commitment to continuous improvement and the linkage of formal and informal organizational rewards to successful implementation, it’s unlikely that a multi-rater system will have a positive effect.

A 360-degree feedback process should be repeated over time. That way, the intervention is truly a process aimed at increasing and improving critical competencies and behaviors rather than a single event providing a one-time snapshot to recipients. If they’re given feedback in a supportive manner and have the opportunity to learn and practice new behaviors, it makes sense to also provide follow-up opportunities to receive new feedback – typically 8 to 12 months later. Then, they can assess their attempts to change their behavior and identify future challenges.

For feedback recipients, the power of a 360-degree process comes from the continuous feedback of observers who have a context within which to identify what people do well and what they need to improve on. Continuous improvement is based on the tenet that feedback over time helps people focus on specific behaviors and approaches that affect competitive performance.

Similarly, the administration of a 360-degree feedback system can benefit from on-going feedback and be continuously improved on, just as someone might walk down a dark hallway with a flashlight to avoid getting lost, organizations need to provide continuous illumination through 360 feedback.

9.2.13. Mistake 13: Not evaluating effectiveness

People often speak of the merits of performing a systematic evaluation but don’t actually do it Too often, 360-degree feedback systems are implemented with the expectation that they’ll translate automatically to improved management effectiveness better team and individual performance; and enhanced relationships between people and their managers, staff, team members, customers, and others. But just learning that you have high blood pressure, for example, doesn’t ensure that you’ll do what’s necessary to minimize the risks. Similarly, only through follow-up and evaluation will an individual or organizations learn to what extent a behavior changes was successful and whether it had an impact on performance.

Despite the growing popularity of 360 degree feedback and other multi-rater systems, few companies rake the time to evaluate systemically the impact and effectiveness of these powerful interventions. Scattered comments from respondents or feedback from senior management are often the only form of evaluation that takes place.

Invest in a rigorous and systematic evaluation of the 360-degree process. Training and performance improvement consultants are well aware of how challenging it can be to ‘teach old dogs new tricks’ and sustain a successful behavior change over time. Even under the best conditions, complex management behaviors can be resistant to change. Multi-rater systems, when properly designed and implemented, make people aware of the crucial first step to changing their behavior overcoming their own resistance. Even when they know what to focus on, they may not be motivated or have the inter-personals kills to go about making a change.

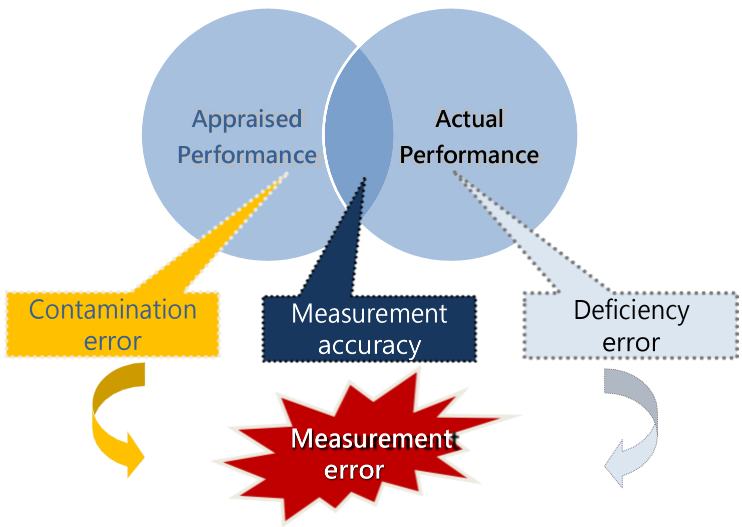
If you’re committed to understanding what constitutes successful implementation of a 360-degree process it’s wise to take the time to evaluate its effectiveness and make alterations. You can conduct an evaluation through post-program surveys, focus groups, or a time-series analysis of critical individual or organizational outcomes such as employee grievances, morale assessed through employee satisfaction surveys, quantitative performance measures, implementation of development plans, or changes in relationships with a respondent’s supervisor, staff, or peers. It’s important to determine exactly how 360-degree feedback can be used to improve both individual and organizational performance.

There are also enormous benefits to an organization. It can send a signal to employees about what behavior is encouraged and expected and what type culture the organization has or is moving towards Multi-rater feedback systems show that all employees opinions are important and actively sought. Such systems should operate on the principle that the truth shall set you free. That reflects a philosophy that the exchange of valid information enhances work relationships and makes an organization function better.

To ensure success and avoid the 13 common mistakes, it’s essential to let people know what they’re getting into, to involve key stakeholders, and to use such systems strategically to address key organizational performance issues. Depending on your organization’s particular quirks, you may have to compromise at times. Sometimes when organizational conditions aren’t optimal, they’re still good enough to gain something positive from an intervention. But be careful: It’s a slippery slope from rational compromise to compromised rationale. If more than a few of the 13 mistakes are present and can’t be corrected don t proceed. it’s a recipe for disaster.

10. Measurement Error

Performance appraisal and measure is subject to two main flaws: criterion contamination and deficiency. The omission of pertinent performance criteria is referred to as criterion deficiency. For example, an appraisal form that rates the performance of police officers solely on the basis of the number of arrests made is deficient because it fails to include other aspects of job performance, such as conviction record, court performance, number of commendations, and so on. Such a deficient form may steer employee behavior away from organizational goals; imagine if police officers focused only on arrests and neglected their other important duties.



Measurement Error

Source: Smither, J.W. & London, M. (2009). Performance Management: Putting Research into Action. San Francisco, CA: Pfeiffer.

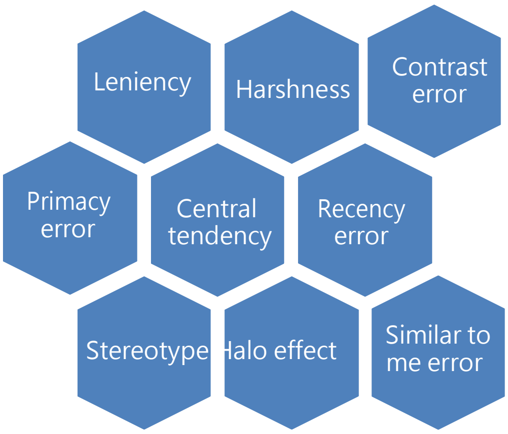
When irrelevant criteria are included on the rating form, criterion contamination occurs, causing employees to be unfairly evaluated on factors that are irrelevant to the job. For example, criterion contamination would occur if an auto mechanic were evaluated on the basis of personal cleanliness, despite the fact that this characteristic has nothing to do with effective job performance.

Performance standards indicate the level of performance an employee is expected to achieve. Such standards should be clearly defined so that employees know exactly what the company expects of them. For instance, the standard "load a truck within one hour" is much clearer than "work quickly." Not only does the use of clear performance standards help direct employee behavior, it also helps supervisors provide more accurate ratings; two supervisors may disagree on what the term "quickly" means, but both attribute the same meaning to "one hour."

To meet the standards, a firm must use an effective rating form. The form provides the basis for the appraisal, indicating the aspects or dimensions of performance that are to be evaluated and the rating scale for judging that performance.

11. Rater Errors

Rater errors are errors in judgment that occur in a systematic manner when an individual observes and evaluates another. Personal perceptions and biases may influence how we evaluate an individual's performance. What makes these errors so difficult to correct is that the observer is usually unaware that she or he is making them. When we understand the errors and how they occur, we are able to take steps to minimize them.



Rater Errors

Source: Smither, J.W. & London, M. (2009). Performance Management: Putting Research into Action. San Francisco, CA: Pfeiffer.

11.1. Halo effect

A halo effect may occur when an employee is extremely competent in one area and is therefore rated high in all categories. Conversely, the horn effect may occur when one weakness results in an overall low rating.

11.2. Recency error

The recency error occurs when an appraiser gives more weight to recent occurrences and discounts the employee's earlier performance during the appraisal period.

11.3. Primacy errors

The primacy error occurs when an appraiser gives more weight to the employee's earlier performance and discounts recent occurrences.

When an appraiser's values, beliefs, or prejudices distort ratings (either consciously or unconsciously), the error is due to bias.

11.4. Harshness error

Strictness, called the "harshness" error, occurs when a manager gives low ratings.

11.5. Leniency error

Leniency errors are the result of appraisers who don't want to give low scores.

11.6. Central tendency errors

Central tendency errors occur when an appraiser rates all employees within a narrow range, regardless of differences in actual performance, especially when using graphic scale.

11.7. Contrast error

The contrast error occurs when an employee's rating is based on how his or her performance compares to that of another employee instead of on objective performance standards.

11.8. Stereotyping

Stereotyping occurs when evaluations are influenced to some degree by a person's membership in a particular social group. Individuals from different cultures consistently misinterpret each other's behavior, possible biasing the appraisals.

11.9. Similar to me error

Similar-to-me error is when the rater's tendency is biased in performance evaluation toward those employees seen as similar to the raters themselves.

Reference

- Aamodt, M.G., Surrette, M.A., & Cohen, D. (2015). Understanding Statistics: A Guide for I/O Psychologists and Human Resource Professionals (5th Edition). Belmont, CA: Wadsworth Publishing.
- Anderson, V. (2013). Research Methods in Human Resource Management (3 edition). London: UK: Chartered Institute of Personnel and Development (CIPD).
- Becker, B.E., Huselid, M.A., & Ulrich, D (2001). The HR Scorecard: Linking People, Strategy, and Performance. Boston, MA: Harvard Business Review Press.
- Bryman, A. & Bell, E. (2015). Business Research Methods (4th Edition). Oxford, UK: Oxford University Press.
- Cascio, W.F. & Aguinis, H. (2010). Applied Psychology in Human Resource Management (7th Edition). Upper Saddle River, New Jersey: Prentice Hall.
- Cascio, W.F. (1999). Costing Human Resources (4th Edition). Cincinnati, OH: South-Western College Pub.
- Coens, T. & Jenkins, M. (2002). Abolishing Performance Appraisals: Why They Backfire and What to Do Instead. San Francisco, CA: Berrett-Koehler Publishers.
- Curtis, B., Hefley, W.E., & Miller, SA. (2001). People Capability Maturity Model (P-CMM) Version 2.0. Pittsburgh, Pennsylvania, U.S.A.: Carnegie Mellon University Software Engineering Institute.
- Fitz-enz, J. (2009). The ROI of Human Capital: Measuring the Economic Value of Employee Performance (Second Edition). New York City, NY: AMACOM
- Fitz-enz, J. (2002). How to Measure Human Resource Management (3rd Edition). New York City, NY: McGraw-Hill Education.
- Grote, D. (2005). Forced Ranking: Making Performance Management Work. Boston, MA: Harvard Business Review Press.
- ISO 10015: 1999. International Standard. Quality management Guidelines for training, 1-14.
- Kaplan, R. & Norton, D. (2001). Building a strategy-focused organization. Ivey Business Journal.
- Huselid, M.A., Becker, B.E., & Beatty, R.W. (2005). The Workforce Scorecard: Managing Human Capital To Execute Strategy. Boston, MA: Harvard Business Review Press.
- Kaplan, R. & Norton, D. (2000). Having Trouble with Your Strategy? Available on hbr.org.
- Lawson, K. (2015). How Can HR Departments Use Quantitative and Qualitative Data? Available on www.ehow.com.
- Lepsinger, R. & Lucia, A.D. (2009). The Art and Science of 360 Degree Feedback 2nd

Edition. San Francisco, CA: Pfeiffer.

- Noe, R. (2012). Employee Training & Development (6th Edition). Columbus, OH: McGraw-Hill Education.
- Othman, S. (2014). Benefits of Combining Qualitative & Quantitative Methods. Available on shayaaresearch.blogspot.tw.
- Phillips, J. & Phillips, P.P. (2014). Making Human Capital Analytics Work: Measuring the ROI of Human Capital Processes and Outcomes. New York City, NY: McGraw-Hill Education.
- Smither, J.W. & London, M. (2009). Performance Management: Putting Research into Action. San Francisco, CA: Pfeiffer.
- Smither, J.W. (1998). Performance Appraisal: State of the Art in Practice. San Francisco, CA: Pfeiffer / Jossey-Bass.
- Türetken, O. & Demirörs, O. (2004). People Capability Maturity Model and Human Resource Management Systems. Human Systems Management, 23, 179–190.
- Ulrich, D. & Brockbank, W. (2005). The HR Value Proposition. Boston: MA: Harvard Business School Press.
- Ulrich, D. & Lake, D. (1991). Organizational Capability: Creating Competitive Advantage. Academy of Management Executive, 5(1), 77-92.
- Wimer, S. & Nowack, K.M. (1998). 13 Common Mistakes Using 360-Degree Feedback. Training and Development, 69-80.