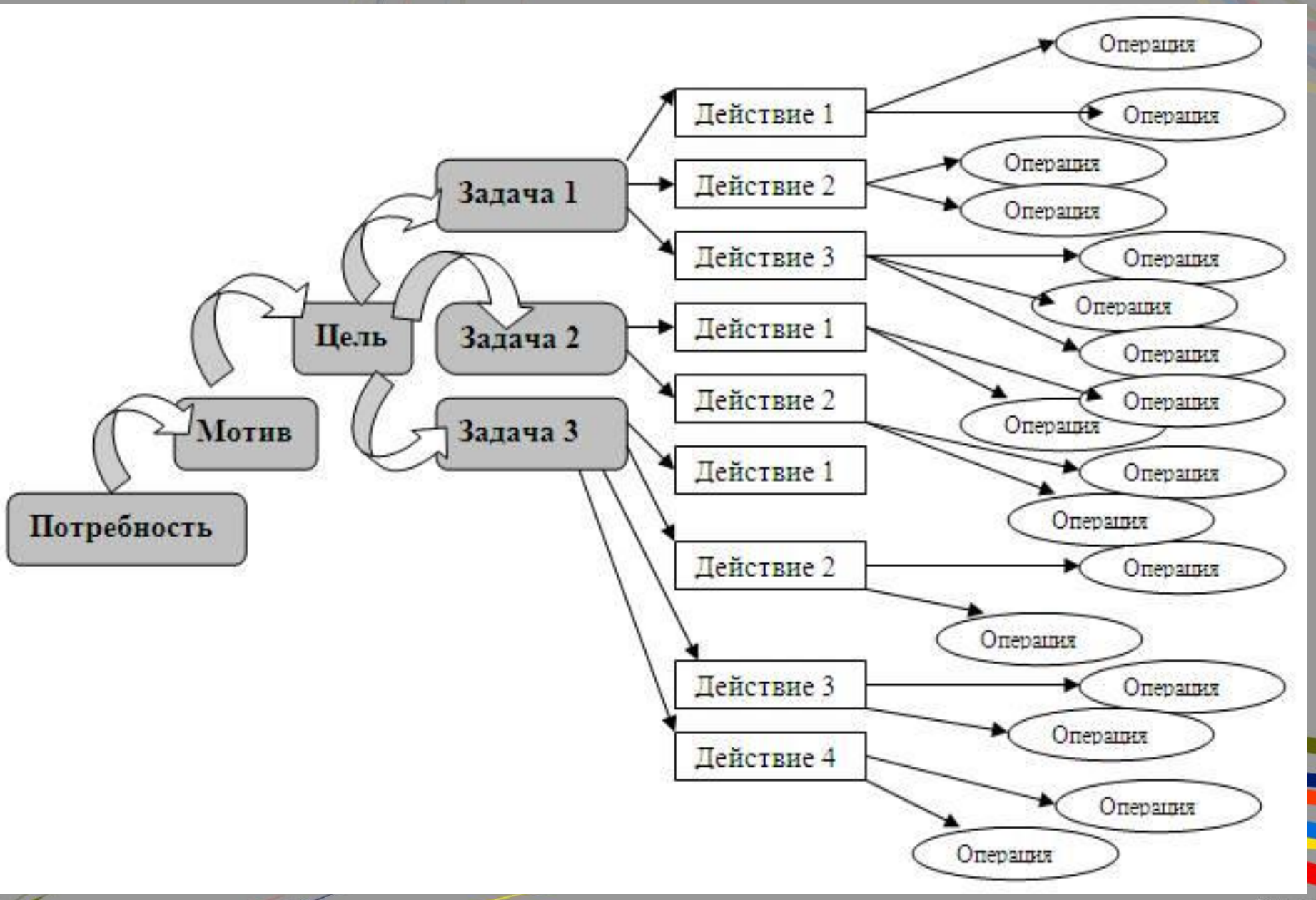
Chapter II
Job analysis

Organizational psychology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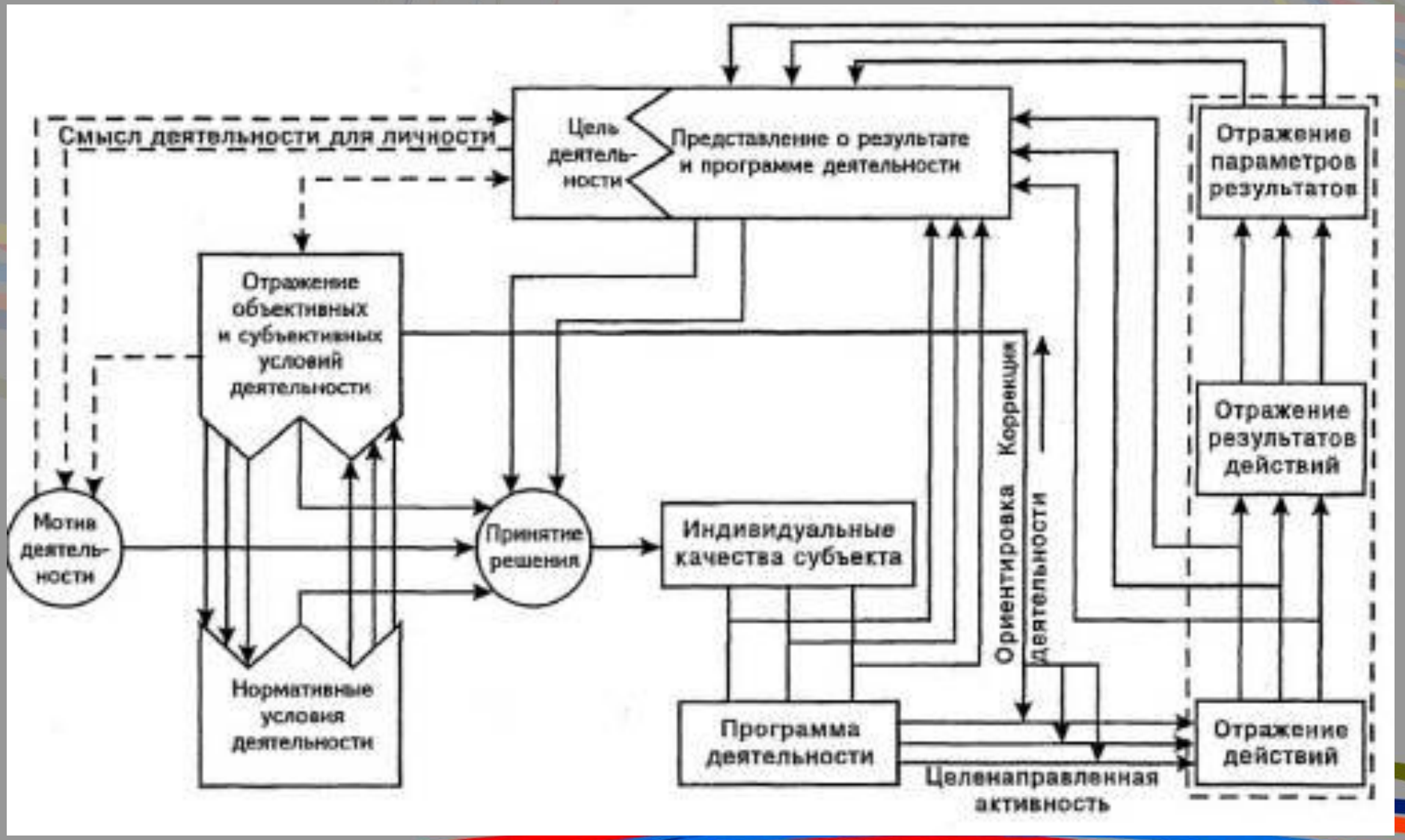

Смысл деятельности для личности
Цель деятельности
Представление о результате и программе деятельности
Отражение параметров результатов
Отражение объективных и субъективных условий деятельности
Мотив деятельности
Принятие решения
Индивидуальные качества субъекта
Ориентировка
Коррекция
деятельности
Отражение результатов действий
Нормативные условия деятельности
Программа деятельности
Отражение действий
Целенаправленная активность

What is Work and Job Analysis?

- **Work analysis**: any systematic gathering, documenting, and analyzing of information about the content of work performed

- **Job analysis**: the process of collecting information about jobs “by any method for any purpose”

Work and Job Analysis – Key Terms

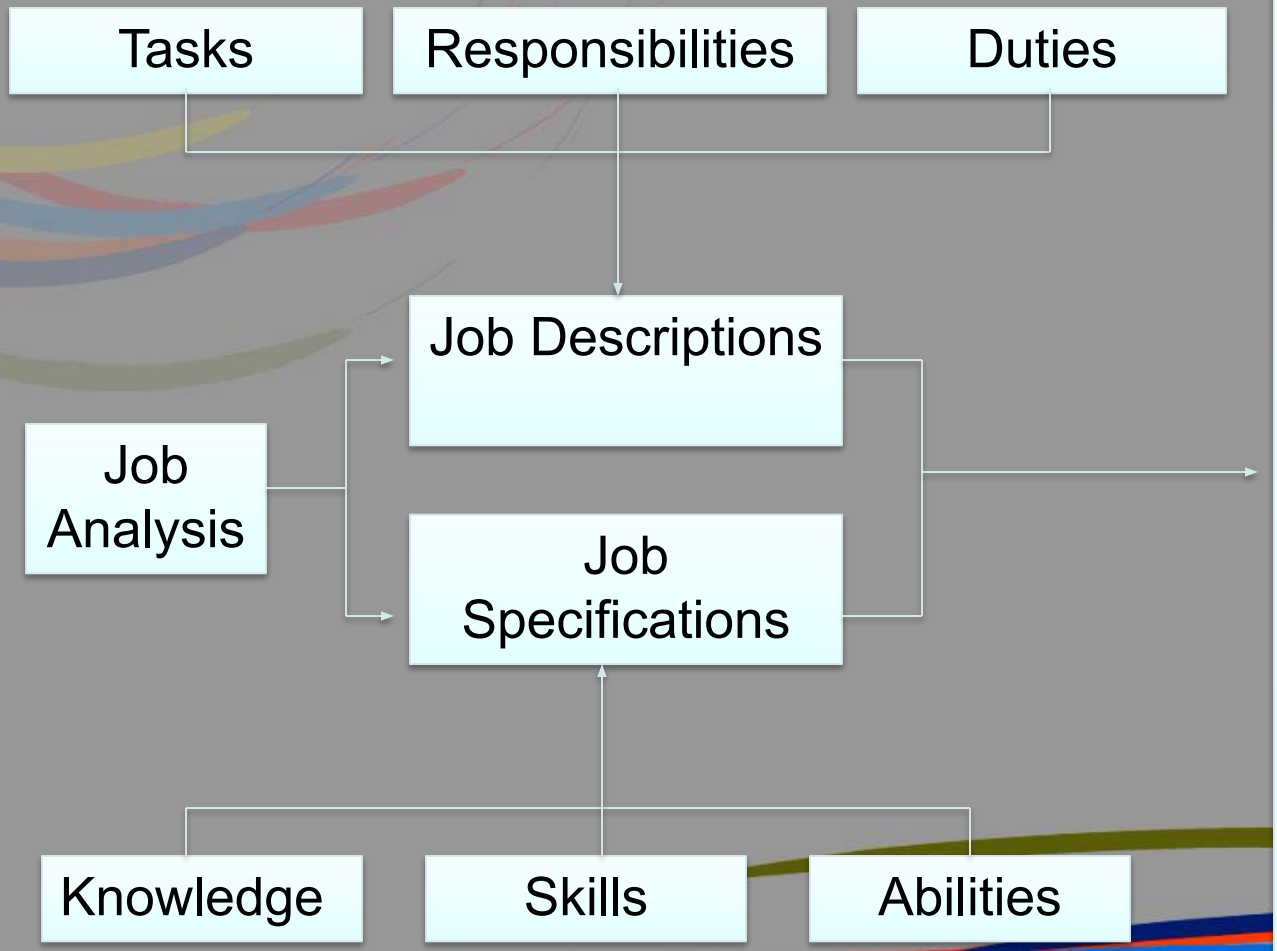
- **Job description**: a written description of what job occupants are required to do; how they are supposed to do it; and the rationale for any required job procedures

- **Job specification**: the knowledge, skills, abilities, and other attributes or competences that are needed by a job incumbent to perform well on the job

Work and Job Analysis – Key Terms

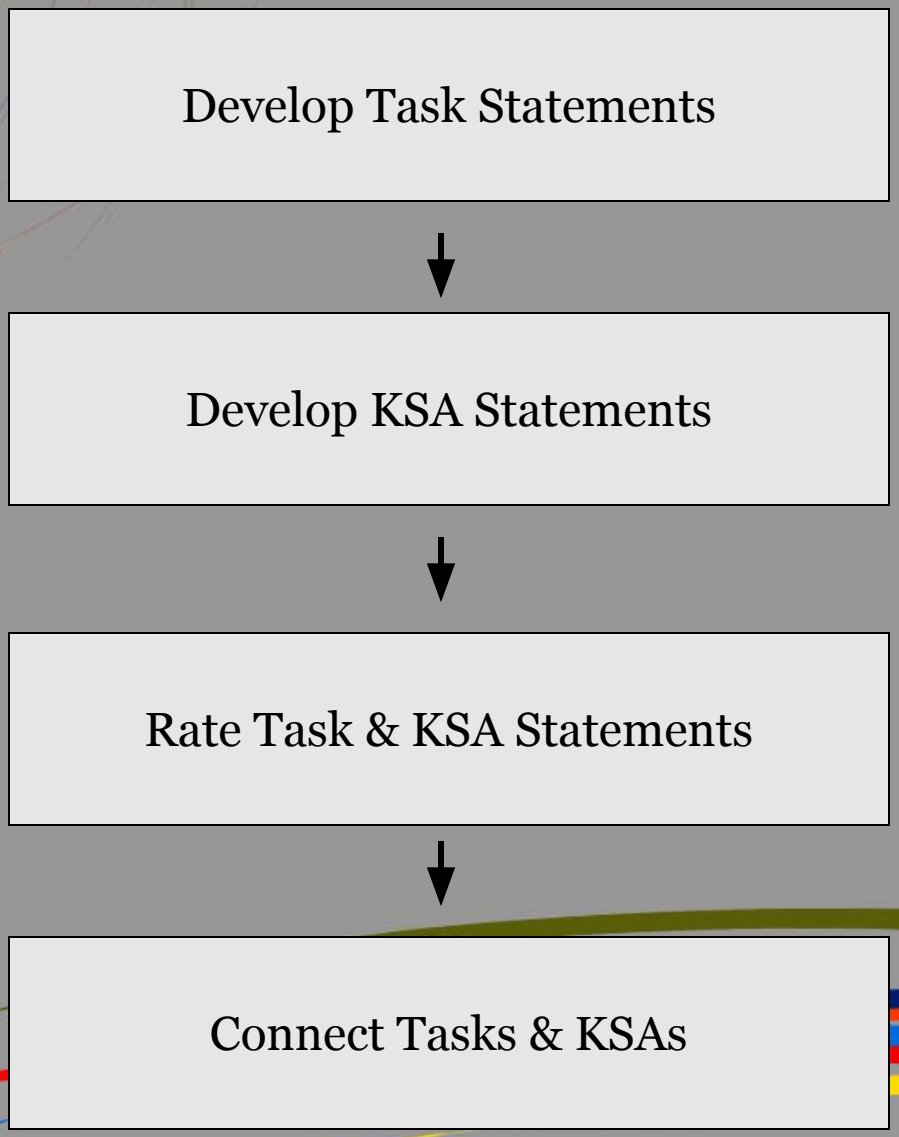
- **Job**: a collection of positions that are similar in their significant duties
- **Position**: a collection of duties assigned to individuals in an organization at a given time
- **Job family**: a set of different, but related jobs that rely on the same set of KSAOs

Job analysis



- Human Resource Planning
- Recruitment
- Selection
- Training and Development
- Performance Appraisal
- Compensation and Benefits
- Safety and Health
- Employee and Labor Relations
- Legal Considerations
- Job Analysis for Teams

“Typical” Job Analysis Process



Basic Methods to Collect Job Analysis Information

Interviews (Individual or group)

Format: Individual or group with SME (Subject Matter Experts)

SMEs: Employees and/or supervisors

Key Points:

- Make purpose of the job analysis clear
- Interviewers need to be trained
- Use a structured format

Potential Limitations:

Employees may distort the responsibilities of their job

Supervisors may lack detailed information as to how the job is done

On-Site Observation

- Best used for structured jobs
- Need to get a representative sample
- Need to be unobtrusive
- Beneficial to use a structured format to record observations

Note: Some suggest that it's best to observe before conducting interviews. In some cases, observations may **not** be possible (e.g., safety concerns, union objections)

Questionnaires (e.g., Position Analysis Questionnaire; PAQ)

Dimensions measured by the PAQ:

a) Where and how employees get job/task information

b) Cognitive process involved (e.g., planning, organization, making decisions)

c) Output (e.g., activities performed, tools/processes used)

d) Interpersonal relationships required (e.g., co-workers, clients)

e) Context of job (physical and social)

Advantages:

- PAQ can allow comparisons and generalizations across jobs
- Decent internal consistency reliability (.80)
- Inter-rater reliability of .66

Limitations:

- Cannot clarify questions or follow up on respondents answers
- Best used for manual labor jobs (lots of items related to equipment use)
- Relatively high reading level level (10th - 12th grade)
- Task differences may not be measured due to behavioral similarities

Job element Method

Definition of job element method (JEM method)

Job element method is a method of job analysis, developed by Ernest Primoff.

This method, like the critical incident technique, focuses on satisfactory workers. It attempts to identify the characteristics of satisfactory workers (job elements).

JEM method focuses on work behaviors and the results of this behavior rather than more abstract characteristics.

Process of JEM method

The steps to perform a Job Element job analysis are:

Step 1: Select a group of experts
JEM is usually conducted by a professional analyst, who are project leader, and a team of six subject matter experts (SMEs), who are usually incumbents and supervisors.

Step 2: Conduct brainstorming sessions to identify job elements
• SMEs will make a list of element of job.
• When all of the elements have been listed, the analyst asks the SMEs to provide sub-elements. Sub-elements are specific behavioral examples that illustrate the meaning of the element

Process of JEM method

Step 3: Assign weights to each of the elements based on the following criteria

• Trouble Likely If Not Considered (T): the trouble likely to occur if the element is not considered; and

• Practical (P): practicality–the effect of including the job element on the organization's ability to fill job openings.

• Barely Acceptable (B): proportion of barely acceptable workers who have the job element;

• Superior (S): effectiveness of the element in picking a superior worker;

Process of JEM method

Step 4: Derived scales is process of delivering scale values from the expert ratings

Step 5: Assigning elements to categories

Categories includes

- E = Element,
- S = Significant
- SU = belement,
- RS = Rankable- Screenout,
- TS = Training Subelement,
- SC = Screenout

Step 6: Use results in your application

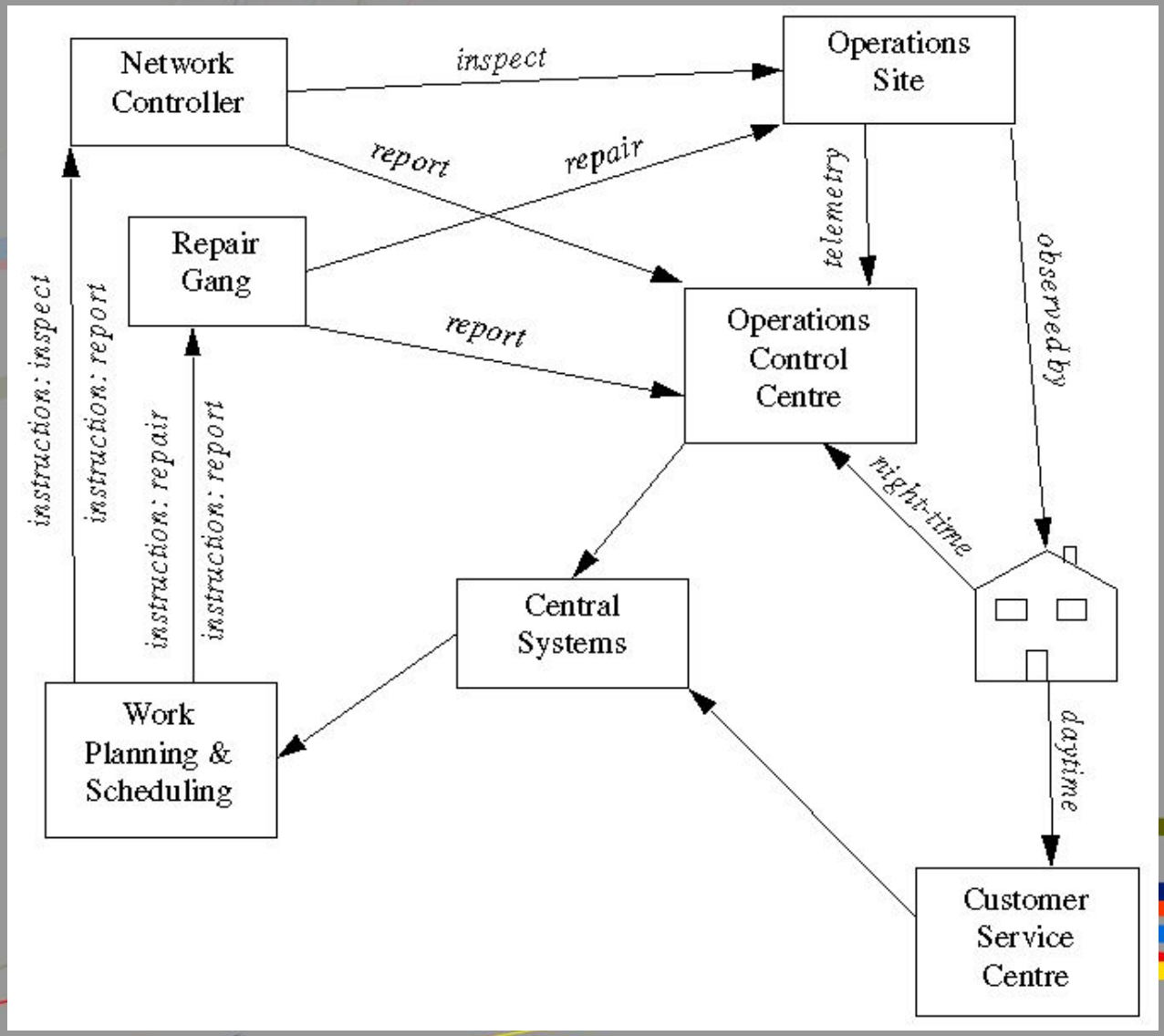
Critical Incidents Technique

- A worker-oriented method developed by Flanagan (1954)
- Worker oriented method of job analysis
- Focuses on examples of particularly successful/unsuccessful on-the-job behaviors
- Basic Procedure:
  - SME's are gathered to provide as many examples as possible.
  - Incidents are sorted into categories that make sense

Critical Incidents Technique

- Advantages: well suited for performance appraisal
- Disadvantages: focuses on extreme behaviors rather than typical behaviors, not applied very systematically

Critical Incident Technique



Functional Job Analysis

- **Functional job analysis**: defines task statements as verbal descriptions of activities that workers do; it is what gets done on the job to facilitate recruitment, selection, and compensation

Functional Job Analysis

- A job-oriented method developed by Department of Labor in the 1930's and later refined by Sydney Fine
- Uses a variety of general methods of job analysis (e.g., interview, survey, observation)
- The Dictionary of Occupational Titles was created with FJA
- All jobs considered in 3 main dimensions:
  - Data: information, knowledge, concepts
  - People: amount and type of contact with people
  - Things: inanimate objects used on the job (MTEWA)

Functional Job Analysis

- Basic Procedure:
  - Break job down into tasks
  - Rate each task in terms of Data, People, and Things
  - Sum Scores to get a total composite on each dimension
- Advantages: comprehensive and effective, suitable for a wide variety of purposes
- Disadvantage: can be time-consuming and expensive

Functional Job Analysis

- Used beginning in the 1940's
- Seven scales to describe what workers do in jobs:
  - (1) Things
  - (2) Data
  - (3) People
  - (4) Worker Instructions
  - (5) Reasoning
  - (6) Math
  - (7) Language

	DATA	PEOPLE	THINGS
Basic Activities	0 Synthesizing	0 Mentoring	0 Setting up
	1 Coordinating	1 Negotiating	1 Precision working
	2 Analyzing	2 Instructing	2 Operating—controlling
	3 Compiling	3 Supervising	3 Driving—operating
	4 Computing	4 Diverting	4 Manipulating
	5 Copying	5 Persuading	5 Tending
	6 Comparing	6 Speaking—signaling	6 Feeding—offbearing
		7 Serving	7 Handling
		8 Taking instructions — helping	

Position Analysis Questionnaire

- A worker-oriented method developed by McCormick and associates at Purdue U.
- Standardized questioning containing 194 “job elements” referring to a specific aspect of work behavior (e.g., use of measuring devices)
- SME’s rate the relevance of the job elements that are organized into six categories

Position Analysis Questionnaire

- Advantages: can be used for any job, good method for comparing jobs or classifying jobs, relatively inexpensive and easy to use
- Disadvantages: people may misrepresent their job, can take a lot of time to administer, must be interpreted at Purdue U., requires a high reading level

Limiting Error/Bias in Job Analysis

- Use multiple sources of information about the job
- Use more than one trained and experienced analyst, if possible
- Give analysts enough time to do the job right
- Check and recheck information and results

Job Evaluation

- An assessment of the relative value of jobs to determine appropriate compensation.
- A process that allows one to determine the financial worth of a job:
  - Setting wages
  - Determining comparable worth (whether jobs that require equivalent KSAOs are compensated equally)

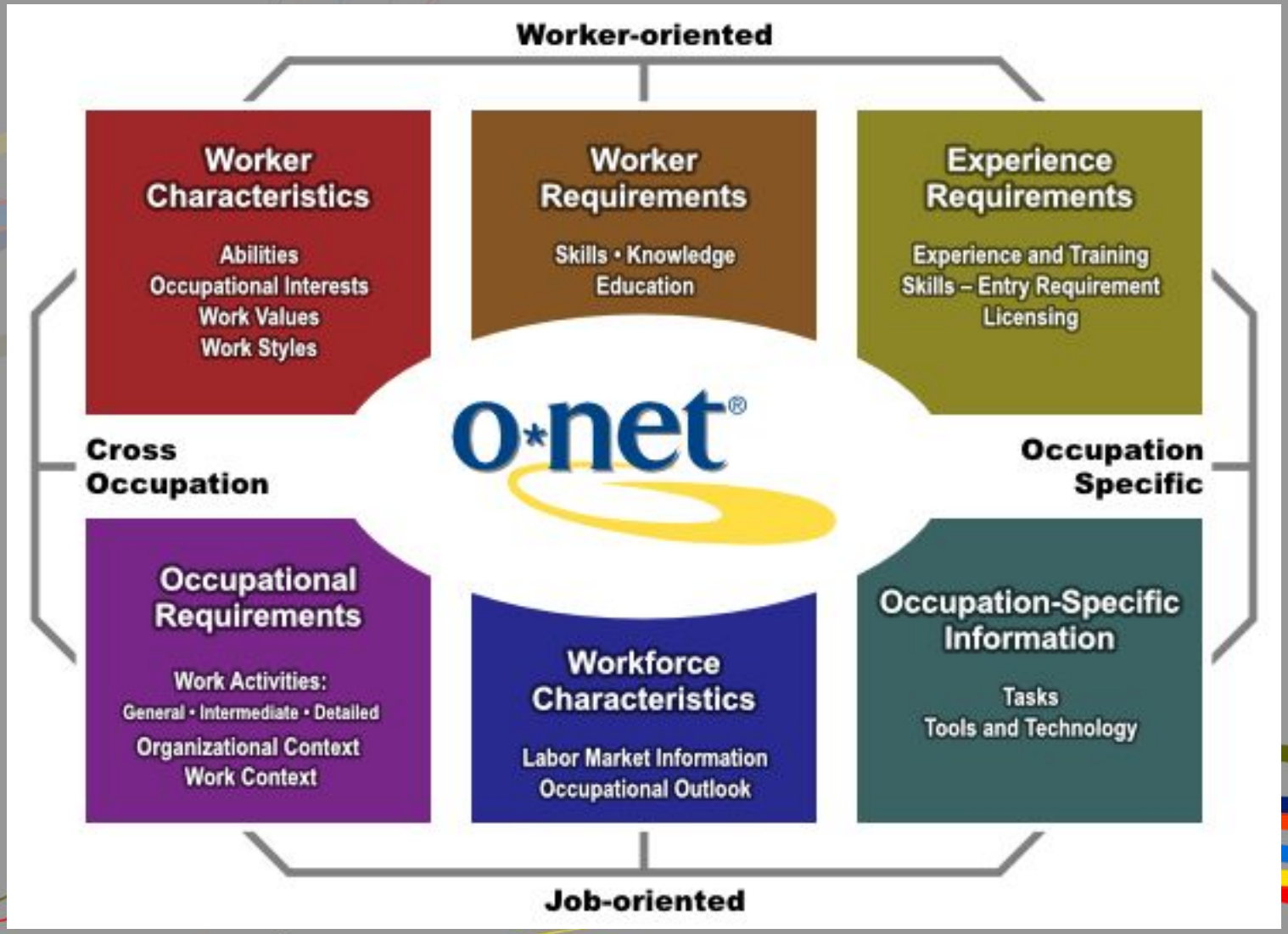
A Method of Job Evaluation

- The Point System
  - Determine compensable factors - important and common work factors across jobs used to determine appropriate compensation (e.g., physical demands, responsibility, specialized knowledge, etc.)
  - Assign each job a score on each compensable factor.
  - Total scores on compensable factors and convert into dollar amounts.

A Method of Job Evaluation

- The Point System
  - Market value of labor also may come into play (supply and demand).
  - A wage trend line can be created by plotting point totals against current wages.
  - When wage discrepancy is determined, the underpaid is usually given a raise.
  - Exceptioning is the practice of ignoring pay discrepancies between particular jobs possessing equivalent duties and responsibilities.

O*NET



Other Job Analysis Methods

- Common-Metric Questionnaire (CMQ)
- Work Profiling System (WPS)
- Threshold Traits Analysis System
- Fleishman Job Analysis Survey (F-JAS)
- Cognitive Task Analysis (CTA)

Basic Task Statement Components

1) ***What*** is the action being performed? (using an action verb)

2) ***To Whom/What*** is the action directed? (the object, or receiver, of the action verb)

3) ***How*** is the action performed? (e.g., use of certain procedures, equipment, tools). The "how" is arguably the **most crucial** part of the task statement in that it directly relates to KSAs

4) ***Why*** is the action being performed? (the purpose of the action). Often, it is preceded by words such as "in order to" or "so as to." Be careful not to confuse the "why' part of the statement with the "what" section

Task Rating Form

	A	B	C	D	E
	Frequency of use 5 = almost all of the time 4 = frequently 3 = occasionally 2 = seldom 1 = not performed at all	**Importance of performing successfully** 5 = extremely important 4 = very important 3 = moderately important 2 = slightly important 1 = of no importance	**Importance for new hire** 5 = extremely important 4 = very important 3 = moderately important 2 = slightly important 1 = of no importance	**Distinguishes between superior & ad performance** 5 = a great deal 4 = considerably 3 = moderately 2 = slightly 1 = not at all	**Damage if error occurs** 5 = extreme damage 4 = considerable damage 3 = moderate damage 2 = very little damage 1 = virtually no damage
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					

KSA Rating Form

	Importance for acceptable job performance 5 = extremely important 4 = very important 3 = moderately important 2 = slightly important 1 = of no importance	Importance for new hire 5 = extremely important 4 = very important 3 = moderately important 2 = slightly important 1 = of no importance	Distinguishes between superior & adequate performance 5 = a great deal 4 = considerably 3 = moderately 2 = slightly 1 = not at all
A			
B			
C			
D			
E			
F			
G			
H			
I			
J			
K			
L			
M			
N			

TASK -- KSA MATRIX

To what extent is each KSA needed when performing each job task?

5 = Extremely necessary, the job task cannot be performed without the KSA
4 = Very necessary, the KSA is very helpful when performing the job task
3 = Moderately necessary, the KSA is moderately helpful when performing the job task
2 = Slightly necessary, the KSA is slightly helpful when performing the job task
1 = Not necessary, the KSA is not used when performing the job task

KSA	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
Job Tasks																		
1																		
2																		
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		
11																		
12																		

Kirkland v. Department of Correctional Services (1974)

*"Without such an analysis (job analysis) to single out the **critical** knowledge, skills and abilities required by the job, their importance **relative importance** to each other, and the level of **proficiency demanded** as to each attribute, a test constructor is aiming in the dark and can only hope to achieve job relatedness by blind luck"*

A) The KSAs tested for must be **critical** to successful **job performance**

A) Portions of the exam should be accurately **weighted** to reflect the relative importance to the job of the attributes for which they test

c) The level of difficulty of the exam material should **match** the level of difficulty of the job

Checklist Used to Match Selectors with Job Requirements

	Selection Method						
Job Requirements	Application Form	H.R. Employment Interview	Paper and Pencil Test	Technical Interview	Work Samples Test	Reference Checks	Medical Exam & Drug Test
1. Ability to perform calculations and understand Charts, formulas and tables.			√		√		
2. Ability to read prints and drawings				√	√		
3. Ability to troubleshoot mechanical equipment.				√	√		
4. Knowledge and use of safe practices when handling Materials and tools.			√		√		
5. Ability to use & care for hand and power tools to maintain mechanical Equipment.			√	√	√		
6. Knowledge of basic principles of hydraulic, pneumatic, and compressed air systems.			√	√	√		
Prerequisites							
Previous work experience in hazardous work environments	√	√				√	
Relevant experience and training in mechanical maintenance.	√	√				√	

Competency Modeling
[What is a competency?]

SME group in Schippman et al (2000)

- "The knowledge, skills, and attributes that differentiate high performers from average performers."
- "Competencies are not fundamentally different from traditionally defined KSAOs (i.e., knowledge, skills, abilities, and other characteristics)."
- It is a construct that helps "define level of skill and knowledge."
- "Observable, behavioral capabilities that are important for performing key responsibilities of a role or job."
- "Mishmash of knowledge, skills, and abilities and job performance requirements."
- "I can't."

Recent definitions in the literature

- A mixture of knowledge, skills, abilities, motivation, beliefs, values, and interests (Fleishman, Wetrogen, Uhlman, & Marshall-Mies, 1995).
- A knowledge, skill, ability, or characteristic associated with high performance on a job (Mirabile, 1997).
- A combination of motives, traits, self-concepts, attitudes or values, content knowledge or cognitive behavior skills; any individual characteristic that can be reliably measured or counted and that can be shown to differentiate superior from average performers (Spencer, McClelland, & Spencer, 1994).
- A written description of measurable work habits and personal skills used to achieve work objectives (Green, 1999).

Traditional job analysis versus competency modeling

- Overall, job analysis is more rigorous on a multitude of criteria (e.g., type of content, detail, data collection methods, ranking/prioritizing content)

- Competency modeling was judged to be superior on “linking research results to business goals”

>>> So, competency modeling may not be an adequate substitute for job analysis