A SOCIOTECHNICAL SYSTEMS
REDSEIGN OF A CHILD
WELFARE BUREAU

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Objectives

Participants will

- understand the key elements of a sociotechnical systems redesign process
- understand factors which can lead to the success of a sociotechnical systems redesign
- be able to preliminary assess possible opportunities to use a sociotechnical systems redesign process in an organization
Some history of organization design/redesign

- 1880s-present (?): Scientific management
- 1950s: England coal mining: autonomous groups: birth of STS
- 1960s-1990s: Other STS industrial applications (India, Sweden, etc.) and service sector applications
- 1970s-1980s: Quality of Working Life movement
- 1980s: Industrial democracy, employee ownership
- 1980s–present: TQM, CQI, Lean Six Sigma, etc.
- 1990s: Reinventing government
- 1990s-present: Business Process Reengineering
- Ongoing: downsizing, right sizing, capsizing
From “restructure” to “redesign”

- Organization design as a noun: describes
  - Structure
    - Unit groupings, reporting relationships
  - Processes
    - Communication, coordination, decision making, culture

- Organization design (or redesign) as a verb:
  - Creating or modifying an organization’s structures and processes

- Restructuring
  - usually misses or underemphasizes processes
A sociotechnical system

- **Social system**: organizational culture, management and decision making processes, leadership styles, and communication.

- **Technology system**: core technologies including practice/treatment models and administrative support processes and equipment.
Common usage in HSOs

- analyzing how an organization’s social resources (the skills of its workers, knowledge and experience, communication networks) are consonant with its technical resources (how the work actually gets done) (Grobman, 1999).

- organization's “core technology” (e.g., casework practice) is embedded within a social context (e.g., organizational culture and climate) that can either inhibit or enhance the core technology's effectiveness. (Glisson, et al., 2012)
STS definitions/key principles

- autonomous work groups, participation in decision making re: the redesign
- \textit{minimum critical specifications}: higher levels give to lower levels only the required parameters for what a new process or system needs to include
- joint optimization: \textit{alignment} of the organization’s core technological processes and the organization’s social system
- Variance as deviation from a norm
- Control/correct variance at its source
- \textit{Job} redesign: changing or reorganizing tasks, e.g., enlargement (more complex and challenging), enrichment (more autonomy, responsibility), flextime, telework, automation
Table 1. Classic sociotechnical system design principles.

<table>
<thead>
<tr>
<th>Principle</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wholeness</td>
<td>The work system should be conceived as a set of activities making up a functioning whole, rather than a collection of individual jobs.</td>
</tr>
<tr>
<td>Teams</td>
<td>The work group should be considered more central than individual jobholders.</td>
</tr>
<tr>
<td>Process control</td>
<td>Variances (problems or deviations from expectations) should be identified and handled as close to their point of origin as possible, preferably by those who can prevent them from occurring, without requiring supervisory intervention.</td>
</tr>
<tr>
<td>Self-direction</td>
<td>Internal regulation of the work system is preferable to external regulation of individuals by supervisors.</td>
</tr>
<tr>
<td>Multi-skilling</td>
<td>The underlying design philosophy should be based on a redundancy of functions rather than on a redundancy of parts (multiskilling vs. single-skilling).</td>
</tr>
<tr>
<td>Discretion</td>
<td>The discretionary component of work is as important to the success of the system as the prescribed component.</td>
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<tr>
<td>Joint-optimization</td>
<td>The individual should be viewed as complementary to the machine rather than as an extension of it.</td>
</tr>
<tr>
<td>Adaptation</td>
<td>The design of work should be variety increasing rather than variety decreasing, meaning that individual and organizational learning is essential to allow organizational adaptation to change.</td>
</tr>
<tr>
<td>Meaning</td>
<td>At the level of the individual job in a socio-technical system, there should be for each person an optimal level of variety, learning opportunities, some scope for setting decisions that affect the outcomes of work, organizational support, a job worthy of societal recognition, and the potential for a desirable future.</td>
</tr>
<tr>
<td>Incompletion</td>
<td>Since the context of the organization will continue to evolve over time, no design can be considered ‘finished.’</td>
</tr>
</tbody>
</table>
The STS Design Process

- **Discovery**
  - 1. Paradigm shift
  - 2. Systems model
  - 3. Method and structure

- **Open System Scan**
  - 1. Boundary specification
  - 2. Environmental demands
  - 3. Purpose definition

- **Technical Analysis**
  - 1. Variance matrix
  - 2. Variance control table

- **Social Analysis**
  - 1. Role network
  - 2. Social system grid
  - 3. QWL criteria

- **Ideal Organization**

- **Joint Optimization Design**

- **Design Principles**

- **Provisional Design**

- **Feedback Problems Constraints**

- **Implementation**
  - 1. Planning
  - 2. Subsystem design
  - 3. Evaluation/execution
  - 4. Redesign
## Variance Matrix

### Matrix of Variances: Pension Claims

<table>
<thead>
<tr>
<th>Unit Operations</th>
<th>Variances</th>
</tr>
</thead>
</table>
| **I** Received, and classified Request for payment | 1. **Volume of mail received**  
2. Type of claimant (primary beneficiary or survivor)  
3. Correctness/completeness of policy # on mail  
4. Volume of rush requests  
5. Number of requests per piece of mail  
6. Complexity of request |
| **II** Matched Policy and Request | 7. Timeliness of technical information from other depts.  
8. Availability of Standard Policy File  
9. Availability of request  
10. Completeness of information in request |
| **III** Approved or Denied Request | 11. Timeliness of transaction  
12. Number/type of terms in calculation (complexity)  
13. Accuracy of award amount  
14. Number and origin of required signatures  
15. Availability of materials to complete transaction |
| **IV** Distributed Payment and/or Information | 16. Form of response (check, letter, form)  
17. Timely distribution of materials  
18. |
Quality of Working Life: the Four Cs
Taylor & Felten (1993)

Beyond the traditional lists of satisfiers (generalized feelings of satisfaction)
- Recognized COMPETENCE at the workplace
- Acknowledged CENTRALITY, or real relevance, in applying that competence
- Shared COMMITMENT to the purposes of the enterprise
- Joint CONTROL over the product and the process
Figure 3. Sociotechnical systems design for organizations of the future.
<table>
<thead>
<tr>
<th>From</th>
<th>To</th>
</tr>
</thead>
<tbody>
<tr>
<td>Designing an organization</td>
<td>Designing an organization and its ecosystem</td>
</tr>
<tr>
<td>Designing a static system</td>
<td>Designing a system that is in a continuous state of change</td>
</tr>
<tr>
<td>Designing social systems around a fixed technical system to achieve</td>
<td>Designing organizations, ecosystems, technical systems and social</td>
</tr>
<tr>
<td>joint optimization</td>
<td>systems on an ongoing basis as each element changes to achieve</td>
</tr>
<tr>
<td></td>
<td>balanced optimization</td>
</tr>
<tr>
<td>Using an internal design team to represent the system being designed</td>
<td>Using design labs that bring many voices from inside and outside the</td>
</tr>
<tr>
<td></td>
<td>system into the design process</td>
</tr>
<tr>
<td>Designing the work system</td>
<td>Designing the strategic, operating and work systems</td>
</tr>
<tr>
<td>Designing a system with a fixed membership for its current members</td>
<td>Designing a system in which many important contributions are made</td>
</tr>
<tr>
<td></td>
<td>by people who come and go as their expertise is needed;</td>
</tr>
<tr>
<td></td>
<td>designing for people who are not yet members of the system</td>
</tr>
<tr>
<td>Focusing exclusively on the internal workings of the system</td>
<td>Perfecting collaborative work among entities that compose the value</td>
</tr>
<tr>
<td>Designing for high performance and variance control</td>
<td>chain</td>
</tr>
<tr>
<td>Design based on analysis of current systems</td>
<td>Designing for innovation and agility</td>
</tr>
<tr>
<td>Design based on ideas about what is possible</td>
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</tr>
</tbody>
</table>
A STS Design Process for a HSO

1. Review the organization's purpose and strategic directions.
2. Determine the best, evidence-based service delivery technologies for each program area.
3. Examine in detail the processes through which clients travel during service delivery. Note the ways in which clients encounter staff from multiple programs, and as needed devise coordination mechanisms to minimize steps that clients need to take and maximize efficiencies and quality.
3. Assess the organization’s social system, including organizational culture, decision making and communication processes, coordination across functions or departments, leadership, and employee quality of working life considerations, and use these factors when considering structures.
4. Determine the most appropriate organizational structure, with supporting social systems.
5. Ensure that the entire system, including service delivery programs, structure, staff roles, and organizational processes are all aligned, or “fit” together.
The Case: Child Welfare Bureau

- 850 employees
- Participative process to transform the organization from a centralized to a regionalized service delivery system
- Bureau decision to decentralize services into geographic regions
- Middle managers made initial decisions about which programs would be regionalized and which would remain centralized.
- STS process to get involvement of multiple levels of staff in redesigning programs and work processes within the regional model
Multi-level change management system

- Executive team
- Steering Committee
- Design Team
- Subcommittees
  - sociotechnical systems analysis
  - stakeholder surveys
  - the physical move
- Some overlapping membership
- Recommendations to design the new system
- Broad representation from different programs and staff levels
Minimum critical expectations from the Executive Team

- minimal disruption to clients during worker changes
- keeping operational costs within existing resources
- consistent case handling and procedures across regions
- compliance with state and county regulations
The process

- analyzed a wide range of program and administrative processes
- consulted widely with program and administrative staff to recommend changes
- groups met nearly weekly over five months
- passed recommendations upward for review, refining ideas, and making decisions
- at least two pilot projects were implemented to test new ideas
- over 150 recommendations addressed subjects including
  - enhancing service components
  - new procedures for family reunification
  - increasing family-centered practices
  - training improvements
  - streamlining procedures
  - eliminating redundant procedures.
Implications for practice

Success factors:

- executive-level innovative leadership
- Clearly defined roles and processes
- robust ongoing communication (vertical, horizontal)
- consultation provided through a university grant
- highly participative process involving of all levels of staff
- autonomy within minimum critical expectations
Questions?
Thoughts?

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References


