How Knowledge Management

Can Reduce Variability in

Human Performance

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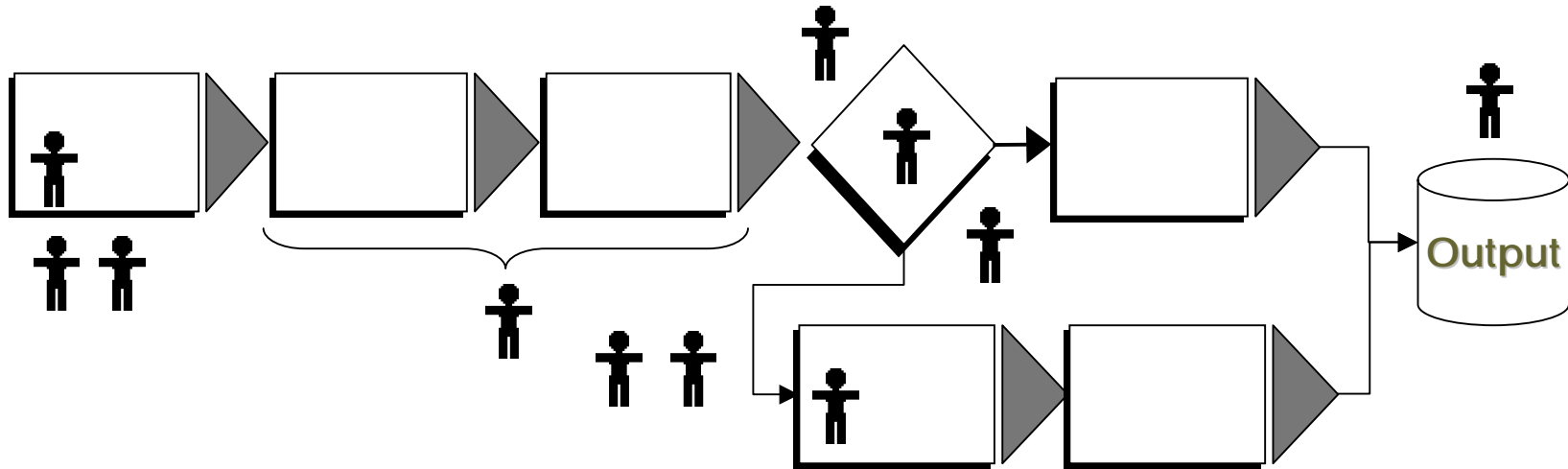phone: 630.682.1649
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Agenda

▶ **Introduction**

▶ **What is human performance?**

▶ **What is knowledge management?**

▶ **Situations and solutions**

▶ **Activity: KMS Bingo**

▶ **Summary and Close**

leveraging know-how for performance!
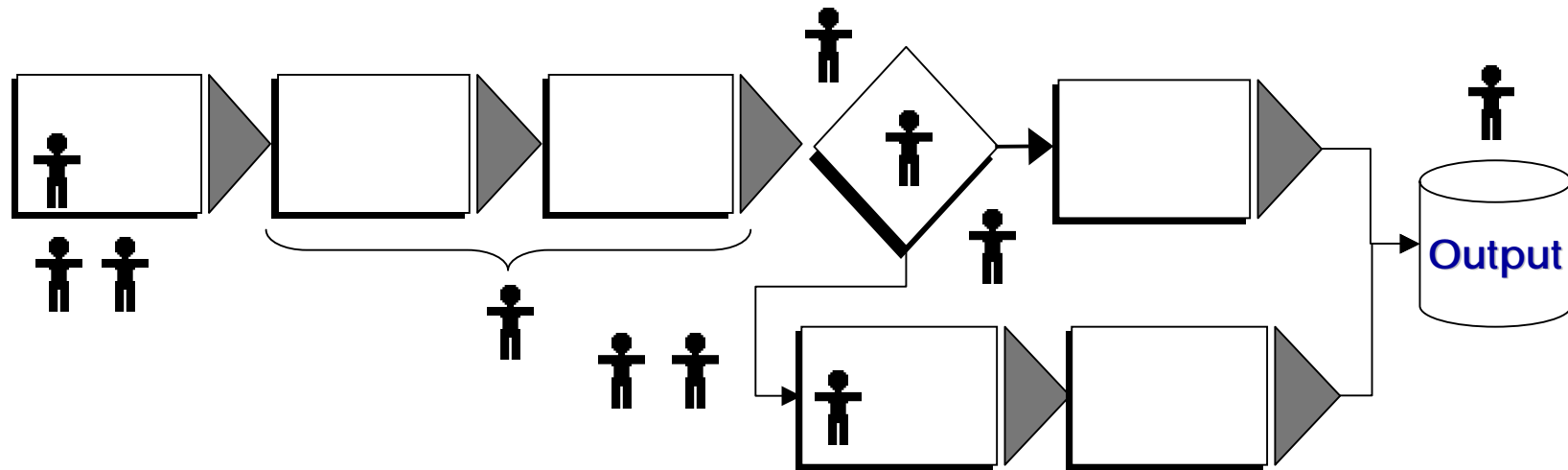
What is needed for human performance?

Required Elements

- ▶ Definition of work (outputs, tasks, measures/criteria)
- ▶ Stimulus
- ▶ Knowledge/skills
- ▶ Tools/equipment/materials
- ▶ Supporting information
- ▶ Incentive (rewards with perceived value to performer)

Variation in Human Performance

Performance *varies* when

▸ *People* change (e.g., shift change, hand-offs, new hires)
▸ Performance is *complex*
▸ Performance is *repetitive* (loss of attention)
▸ Performance is *interrupted*
▸ *Standards* change
▸ *Pressure* for results performers can't control (e.g., overload)
▸ Etc.

Solution—Minimize Impact of Human Performance

A common solution is to treat human performance as a "noise factor"!

- ▶ Detailed procedures
- ▶ Close inspection and management
- ▶ Increased automation/reliance on tools and systems

When this isn't possible, the next layer of defense is

- ▶ Training
- ▶ Documentation/reference materials
- ▶ Qualification

But Sometimes You Need Human Performance…

For example

- ▶ Service
- ▶ Complex performance situations
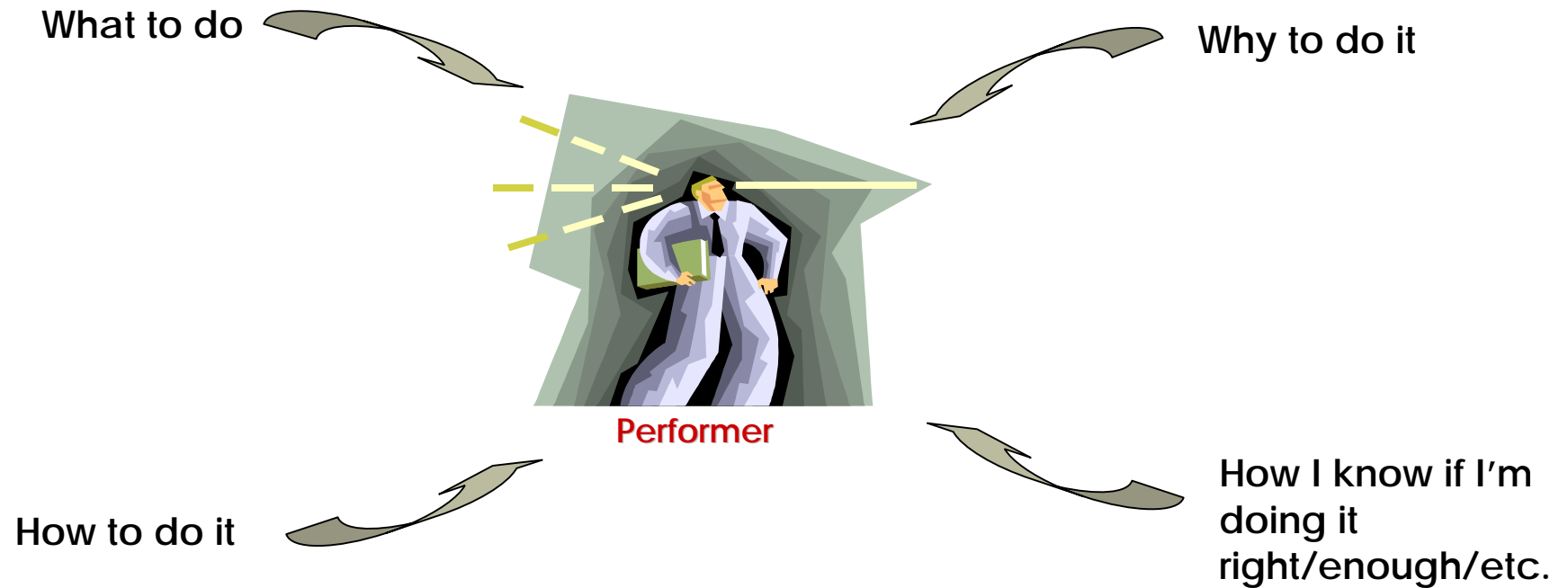- ▶ Varying performance requirements
- ▶ Regulatory requirements

And, human performance may provide the best opportunity for competitive advantage!!
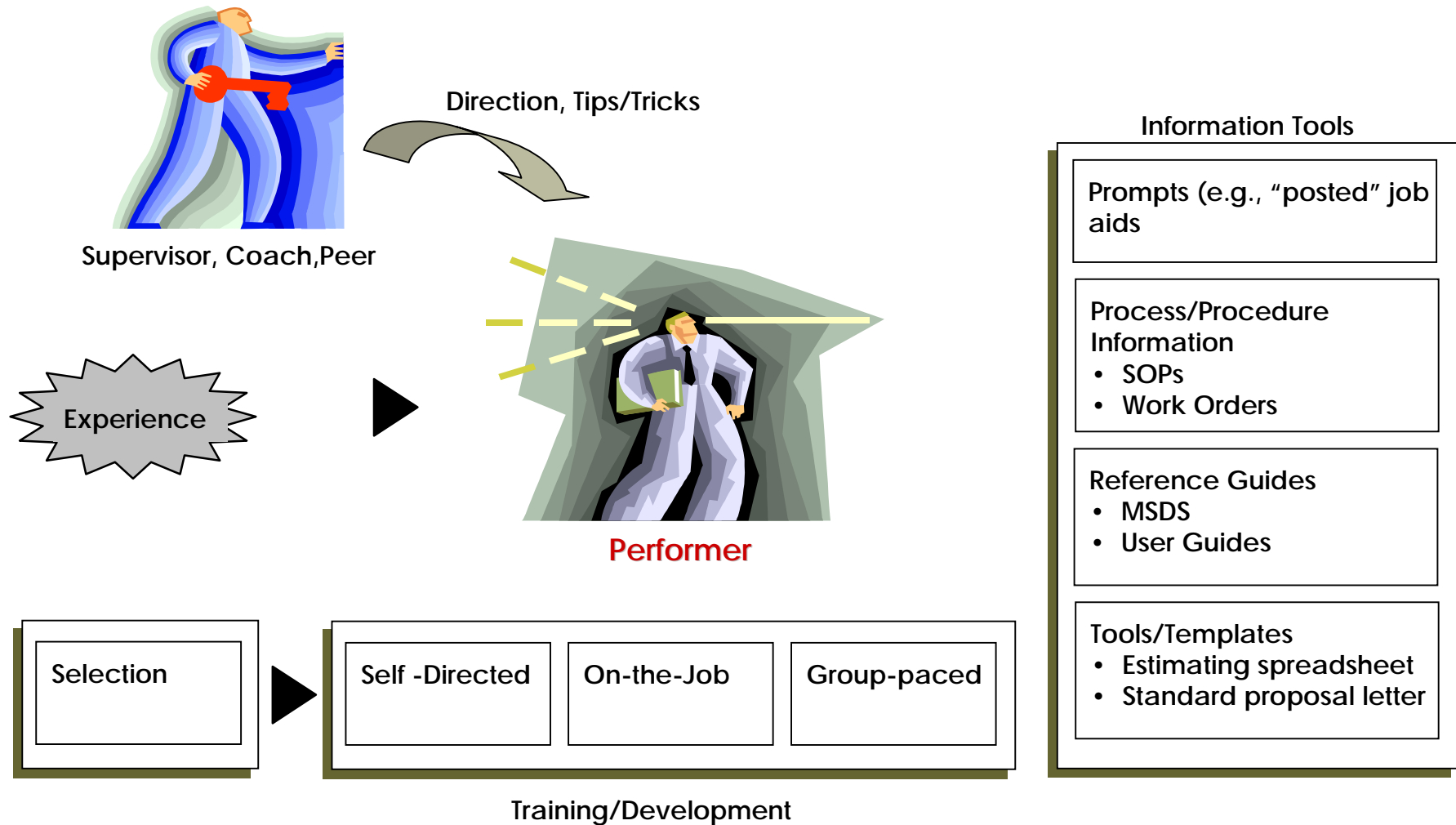
The Performance System

In addition to the equipment, materials, and process, a performer needs to know

What to do

Why to do it

Performer

How to do it

How I know if I'm doing it right/enough/etc.

The Performance System

Direction, Tips/Tricks

Supervisor, Coach, Peer

Experience

Performer

Information Tools

Prompts (e.g., "posted" job aids

Process/Procedure Information
- SOPs
- Work Orders

Reference Guides
- MSDS
- User Guides

Tools/Templates
- Estimating spreadsheet
- Standard proposal letter

Selection	Self -Directed	On-the-Job	Group-paced

Training/Development

What is knowledge management?

K = Useful repeatable patterns of behavior

M = Creating, storing, disseminating, and maintaining K

S = Systems, processes, and resources for accomplishing KM

The label "KMS" is really too narrow. A better label would be *human performance support system*—the tools and processes and everything it takes to operate and maintain them

One Size Does Not Fit All

Different performances have different needs for knowledge and knowledge support systems

- ▶ Facts/rules/information versus ideas/wisdom
- ▶ Volatile versus stable content
- ▶ Reference versus application
- ▶ Solo versus team
- ▶ Real-time versus "stop-time" performance
- ▶ Connectivity
- ▶ Repeated process versus "one-offs"
- ▶ Etc.

Example: Call Center Agents

Situation:

- Overall general process but variation with each call

- Large amount of supporting knowledge and information

- Frequent change in performance requirements

Solution:

- Simulation-based training

- On-line reference tools for "real-time" access

- Limited scripting (specific call segments only)

- "Calibrated" observers

Example: Controls Systems Technicians and Engineers

Situation:

- Detailed procedures for specific tasks and products but less so for overall process

- Variability in customer environment

- Frequent change in performance requirements

Solution:

- Performance-based qualification

- Computer-based work tools (e.g., system engineering, programming)

- Library of "best practices"

- Training

K M S

BINGO!

What Not to Do—Top 10 KMS Mistakes

1. No business rationale

2. No consequences for contributing content to system

3. No consequences for using the system

4. System is too complex/difficult to use

5. Not designed to address felt performance need

6. Not designed for the job environment

7. No plan for content maintenance

8. Not resourced adequately

9. Driven by staff, not line

10. Not integrated with related tools/systems/processes

Summary and Close

▶ Variation in human performance due to gaps in capability often have widely differing causes—it is important to understand the cause before designing a solution

▶ Human performance support systems (including KMS) need to be designed to fit the performance needs as well as for usability and maintainability

▶ Design KMS as a system to work with other human performance support processes such as training, qualification, reference materials, tools, coaching, etc.

Thanks for your attention!!

For More Information . . .

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▶ "Concurrent Design of Products and Information Support Systems"

▶ Project Profile: Developing a Qualification Catalog for an Engineering Organization

▶ Give Customers What They Meant to Ask For: Designing Training Systems at Three Levels

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