TRANSPARENCIES FOR UNIT 6

TECHNOLOGY TRANSFER MECHANISMS

MECHANISMS

- NEW VENTURE STARTUPS
- PATENTS AND LICENSING
- PERSONNEL EXCHANGES / EDUCATION / TRAINING
- TECHNICAL ASSISTANCE
- COOPERATIVE R & D AGREEMENTS
- USER FACILITIES AND EQUIPMENT
- DEMONSTRATION PROJECTS (TECHNICAL FEASIBILITY)
- PUBLICATIONS

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CRITERIA FOR SELECTING MECHANISMS

- NATURE OF THE TECHNOLOGY
- NATURE OF THE INDUSTRY
- LABORATORY AND FIRM RESEARCH OBJECTIVES
- COST TO LABORATORY AND FIRM
- BENEFITS TO LABORATORY AND FIRM

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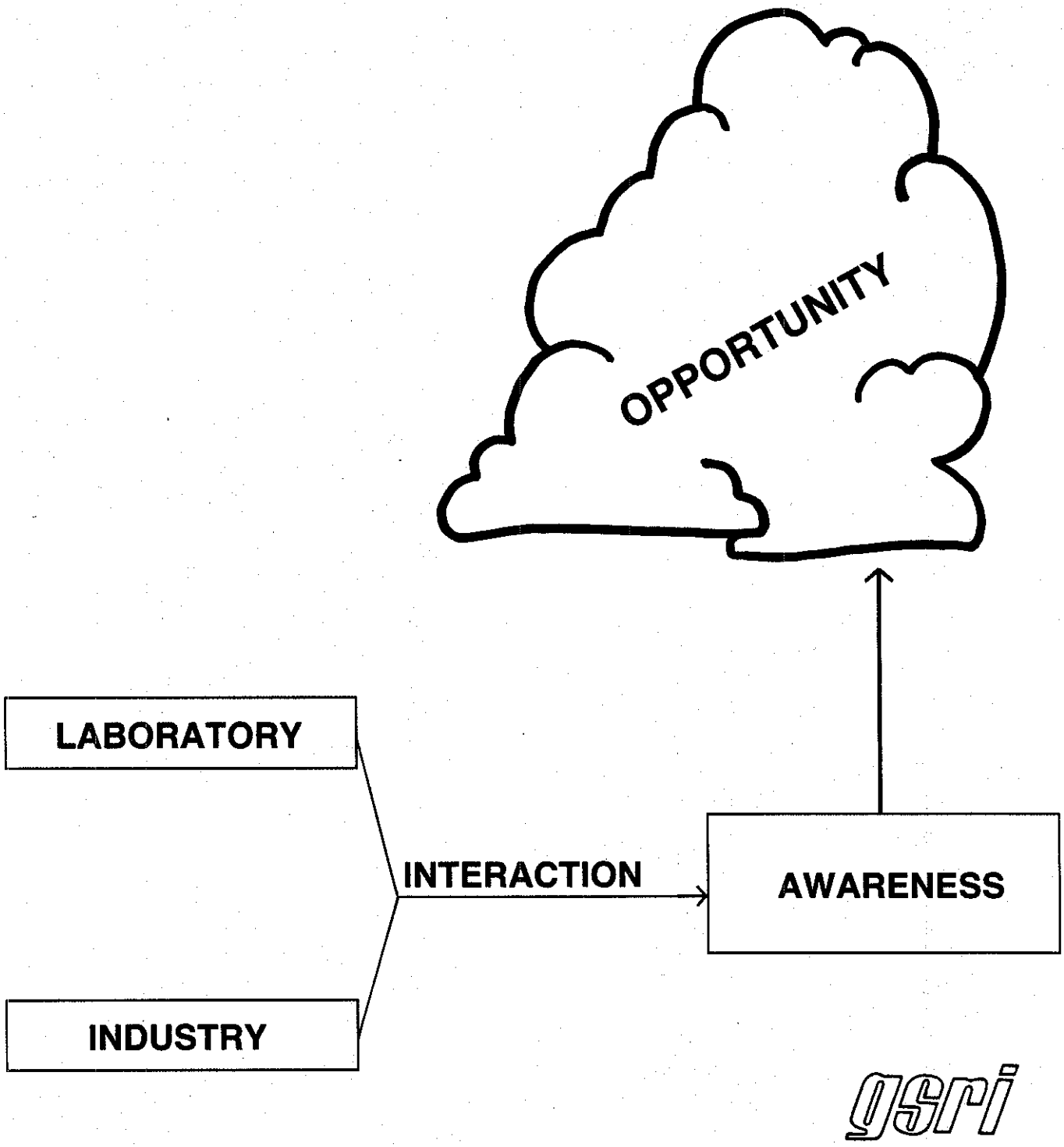
OPPORTUNITY
LABORATORY
INDUSTRY
INTERACTION
AWARENESS
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ATTEND INDUSTRY ACTIVITIES

- CONFERENCES AND PROFESSIONAL MEETINGS
- INDUSTRY TECHNICAL COMMITTEES
- INDUSTRY TECHNOLOGY ACQUISITION CONTACTS
- CONVENTIONS, TRADE SHOWS, EXHIBITS
- INDUSTRY ASSOCIATIONS
- VISITS AND EXCHANGES IN INDUSTRIAL LABORATORIES

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SPONSOR LABORATORY ACTIVITIES

- VISITING SCIENTISTS AND ENGINEERS
- CONFERENCES, WORKSHOPS, SEMINARS
- TECHNOLOGY BRIEFINGS
- INDUSTRIAL LIAISON PROGRAM
- TECHNICAL ASSISTANCE
- INFORMATION BUREAU

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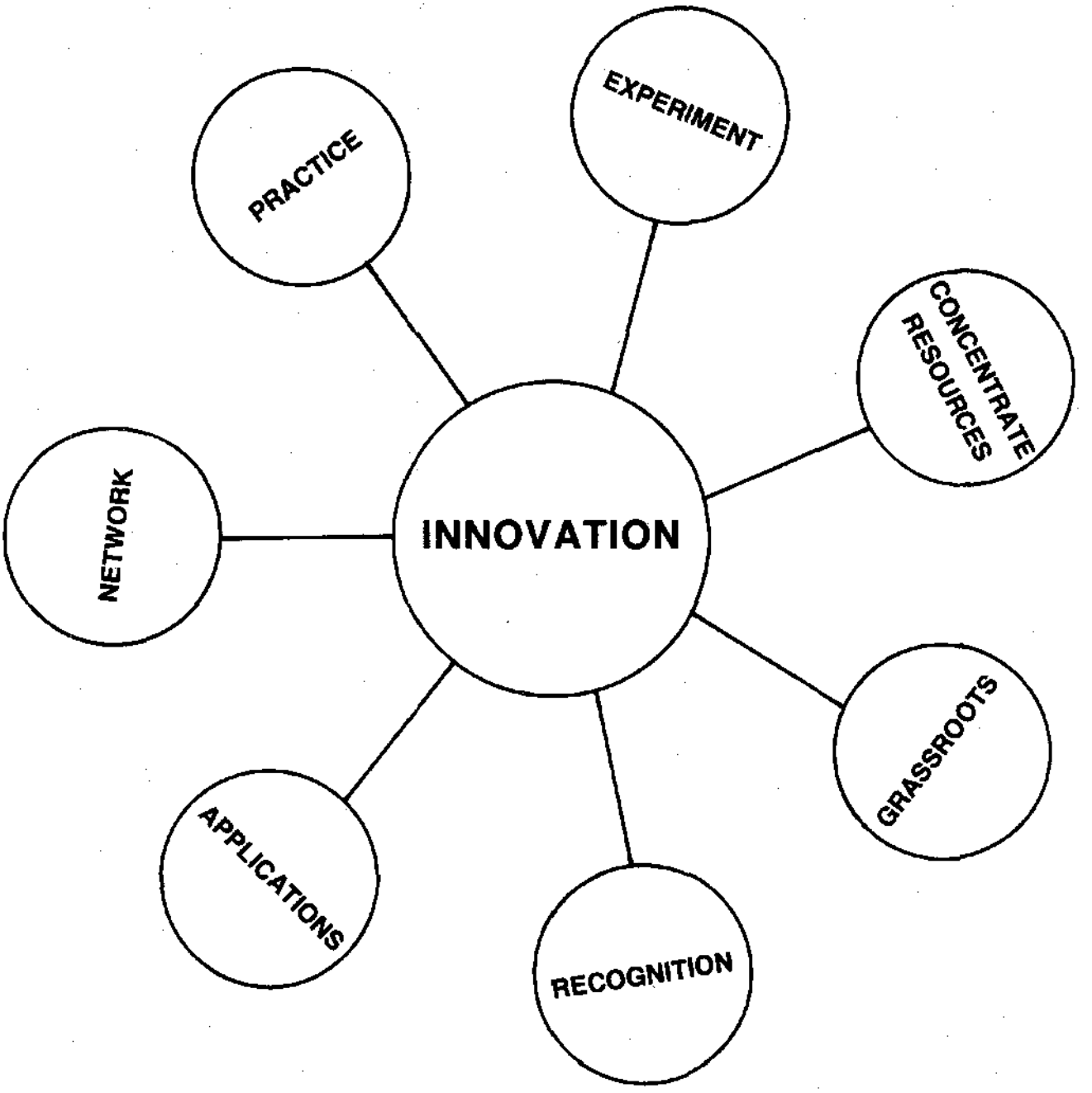
INNOVATION
PRACTICE
EXPERIMENT
CONCENTRATE RESOURCES
NETWORK
GRASSROOTS
APPLICATIONS
RECOGNITION

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HANDOUT FOR UNIT 6

RULES OF THUMB FOR A TECHNOLOGY TRANSFER PROGRAM

1. Technology transfer must be practiced. The best way to learn it is to do it.

2. Keep an open mind. The whole field is new and experimental. The best mechanisms for transfer may not have been discovered yet. Be flexible and try new approaches.

3. Keep focused on the final objective--innovation. Orient laboratory actions toward the firm's needs--since it is the firm that will achieve your mutual objective. Create win-win situations.

4. Expect a few, small accomplishments. Grandiose plans are complicated and difficult to manage. It is better in the beginning to take on small projects and work hard to complete them. Concentrate your resources. You will show results and build confidence.

5. Develop grassroots support within the laboratory. Not many people will be interested in commercial applications. Search out the ones who are and work with them. Others will join in as they understand the intent and as small successes are accomplished.

6. Use the incentives provided by Congress and create new, less-formal incentives. Remember, recognition is as important as money. Form an inventors club or include accomplishments in intra-laboratory announcements. Devising innovative forms of recognition lends itself to creative thinking. Be imaginative and have fun.

7. Finding applications is a key success factor. You might institute training programs to develop a sensitivity toward the identification of diverse applications. Use industry contacts extensively.

8. Realize that one of the most valuable commodities that you have to transfer is knowhow, which can be transferred rapidly and at low cost. Companies may be more interested in the capabilities of your personnel and the research areas in which they are advancing than in any patented technologies that you may have to offer. Catalog your areas of expertise and your ongoing research efforts and make these available to the private sector to solicit interest.

9. Stress in your promotional literature that you have the capacity to work with the private sector. Use specific

examples of working relationships with the private sector to demonstrate your willingness and capacity to work with other companies. Remember that a company will probably be unwilling to enter into any long-term transfer activities with a laboratory unless the laboratory can demonstrate that it has the capacity to respond to private sector needs.

10. Make effective use of informal measures for initiating contacts between laboratory personnel and company personnel. Remember that most transfer activities begin through the initial person-to-person contacts established by individuals with common scientific and technological interests.

11. Seek private sector participation at the earliest stages of a technological opportunity. Remember that the private sector is in a much better position to use technological information at the early stages of technological development, before products or processes have been defined in great detail in terms of mission purposes. In addition, the private sector will be in a position to make suggestions for research modifications that can contribute to the development of a marketable item.

12. Do not expect near-term results from a cooperative research arrangement. Technological opportunities may result from the arrangement itself, and unanticipated opportunities may result from a long-term research relationship. It is more important to establish relationships from which technological opportunities may evolve than to establish relationships on the basis of technologies that are already emergent.

13. Keep a close eye on the technological opportunities emerging from these relationships and use these as a basis for establishing even stronger arrangements with the participating company.

14. Remember that technology transfer is generally not a handoff. If a technology is in the early stages of development, additional work may be required in order to put the technology in a form to solicit private sector interest. If a technology is emergent, development will usually need to take place in order to make the technology transferable. If the technology is well advanced or fully developed, adaptation will be necessary in order for the technology to be transferred. In each of these cases, additional effort is needed. In the latter two cases, transfer should be accomplished through joint management of the technology (e.g., through a cooperative research agreement). Even in the first case

(early stage development), extensive application work should not be undertaken unless the private sector has shown some interest. In all cases, technology transfer should be understood as a cooperative endeavor.

15. Finally, you are not alone. You don't have to rely solely on your own resources. It is not necessary to have all the expertise you need inhouse. If you need help, go outside the laboratory--to other ORTAs, FLC, Licensing Executives Society, Technology Transfer Society, industrial firms, industry groups, consultants, brokers, etc. Establish networks for contacts and expertise. Networking will help you to be successful.