OFFICE OF GOVERNOR RONNIE MUSGROVE
INTEROFFICE MEMORANDUM

TO: BOYD

FROM: RILEY

SUBJECT: COMMUNICATIONS AND INFORMATION TECHNOLOGY CLUSTER REPORT

DATE **5/16/00**

The Communications and Information Technology (CIT) Cluster study was made possible due to support from James Barksdale, Bernie Ebbers, John Palmer and Mississippi Technology, Inc. The study team was comprised of members from JSU, Millsaps, Mississippi Technology Inc., Gulfsouth Capital and the Harvard Business School.

The study group used a diamond to define the key elements of cluster success and the steps needed to enhance the Mississippi CIT cluster. The group found a lack of urgency for such a cluster and a need for issues related to the cluster to be addressed head on. The analysis showed that there is a good foundation for a CIT cluster due to the CIT firms present in the area, an attractive quality of life, world-class research efforts in the area, and the presence of Mississippi Technology, Inc., as well as the Mississippi Research Consortium. The analysis also identified several cluster areas in need of improvement, including: cluster-specific factor (input) conditions, cooperation/linkages, cluster awareness, development of a common vision, and incentives to invest/expand/start up.

The Microeconomics of Competitiveness

The economic policy agenda is switching from a macro, economy-wide, national focus to that of a micro, clusters, regional/local focus. A cluster is a geographically proximate group of interconnected companies and associated institutions in a particular field, linked by commonalities and complementarities. Clusters enhance competitive advantages through productivity (efficient access to information, specialized inputs and employees, institutions and "public goods"), innovation (ability to perceive and respond to innovation opportunities) and new business formation (perceiving opportunities for new business). The study group found that clusters' increased innovative capacity leads to competitiveness/productivity, which fosters prosperity.

The study group identified several information technology clusters, with three of these in southeastern states: Huntsville, Alabama; Knoxville, Tennessee; and, Raleigh-Durham, North Carolina. The study identified Tupelo as an automotive cluster.

Government plays several appropriate roles in economic development, one of which is facilitating cluster development and upgrading. Government can convene cluster participants (institutions and multiple levels of government); align government's organizational structure, and other data collections, with clusters; and, encourage other institutions (universities, training providers) to develop cluster-based strategies. The study found that companies often initially see clusters as creating more competition or driving up local costs, but many have found that clusters can increase efficiency, as well as flexibility and information, while speeding up innovation.

The study offered several guidelines for organizing and implementing successful cluster initiatives. Among other things, clusters should be led by the private sector with active government participation, rather than being organized and controlled by government. There should be wide involvement of cluster participants, as well as associated institutions, with a focus on removing obstacles and easing constraints to cluster upgrading, rather than seeking subsidies or limiting competition. Clusters should not be used as a cover for industrial policy. The study found that the shifting economic policy agenda, with its micro, innovative focus encompassing clusters, results in an economic agenda integrated with social policy.

Finding on the Communications and Information Technology (CIT) Cluster in central Mississippi

The study group found that Mississippi has the basic building blocks – research, industry base, public/private institutions – to support a world-class computer cluster centered o communication and information technologies (CIT). The study group projects that a cluster would enhance the products of traditional Mississippi industries and would result in attractive productivity gains on the national level. A CIT cluster would create jobs (global wages from CIT jobs are expected to grow by 50% by 2003) and build wealth, enabling Mississippi to have a competitive advantage, rather than a comparative advantage, in the CIT market.

As mentioned earlier, the study group used a diamond to define the key elements of cluster success and the steps needed to enhance the Mississippi CIT cluster:

Factor (input) conditions: The group concluded that there is no discernible advantage in CIT cluster factor (input) conditions and that there is a competitive disadvantage in some cases. This conclusion is based largely on the fact that the area's general and CIT physical infrastructures are not keeping pace with regional rivals and/or the basic needs to supper a CIT cluster development.

Context for firm strategy and rivalry: The group concluded that there is a lack of knowledge of the breadth of CIT firms and this has limited cooperation/competition among such firms. There is a perception of the industry being dominated by one large firm (WorldCom), with no aggressive mentality of "taking on the big boys."

Related and supported industries: The group found that the lack of a cluster mentality, coupled with unfocused CIT efforts, has led to a number of different CIT firms with no real sense of a cluster and some missing pieces (information technology, communications and support services).

Demand conditions: Mississippi lacks a sophisticated consumer market that pushes the innovation of CIT products and services due to the state's lower CIT adoption rate than in other regions and limited use of Mississippi in the past for CIT launches. Mississippi has fewer internet users and internet domain names than eight other "southeastern" states. (NOTE: study included Texas, but did not include Florida, Kentucky or South Carolina.)

The study also reviewed three supporting factors to the CIT diamond analysis, as discussed below:

Role of government: The study found that Mississippi has made minimal investments and placed minimal focus on CIT and/or entrepreneurial development. The group based this conclusion on, among other things, lower state appropriations for K-12 education technology, a weak alignment between the private sector and government, as well as a lack of tax incentives to promote R & D, business startup/expansion, and venture/risk capital.

Attitudes, values and beliefs: The group found that the internal and external images of the state need upgrading. The current image is not conducive to CIT cluster development due to resistance to change and a "turf" mentality.

Networks: The group found that CIT cluster networks are either nonexistent or, if present, not fulfilling their productivity-enhancing potential. The group based this conclusion on weak linkages between universities and CIT firms, as well as little understanding of the role of networks in enhancing cluster competitiveness.

The report identified several actions necessary to enhance the Mississippi CIT cluster:

- An aggressive, focused effort that addresses the issues and builds a private sector-led consortium of government, academia and private enterprise;
- Leadership that is focused on a common set of objectives (agenda) accountable for its results;
- A systematic plan that addresses the findings and builds capabilities and confidence with a step-like approach; and,
- Assigning initial responsibilities for necessary actions.