Approved January 28, 1992
Date

MINUTES OF THE Senate COMMITTEE ON Economic Development.

The meeting was called to order by Senator Dave Kerr at
Chairperson

8:00 a.m./~~p.m.~~ XXX on January 24, 1992 in room 123-S of the Capitol.

All members were present except:

Senator Paul Feleciano, Senator Ken Francisco, Senator Jerry Moran, Senator Wint Winter

Committee staff present:

Lynne Holt, Legislative Research Department
Bill Edds, Revisor of Statutes' Office
LaVonne Mumert, Committee Secretary

Conferees appearing before the committee:

Charles Warren, President, Kansas, Inc.
William Brundage, President, Kansas Technology Enterprise Corporation

Charles Warren presented the "Management Review of the Kansas Technology Enterprise Corporation" report (Attachment 1) conducted by the National Association of State Development Agencies for Kansas, Inc. Mr. Warren said the review was part of the comprehensive evaluation program that Kansas, Inc. undertook. He described the process used to review the Kansas Technology Enterprise Corporation (KTEC). Because there was no appropriation made to fund the study and Kansas, Inc. did not have the necessary funds, the $25,000 cost was paid by a transfer of funds from KTEC to Kansas, Inc. Mr. Warren described the team of experts which conducted the peer review.

Senator Salisbury asked about the credibility of a study which was funded by the organization being reviewed. Mr. Warren said the funds were transferred to Kansas, Inc. and Kansas, Inc. wrote the contract and handled the entire process. Mr. Warren remarked that it was appropriate for Kansas, Inc. to consult with KTEC in the selection of the members of the review team but that there is no question as to the credibility of the team members. Chairman Kerr, a member of the KTEC Board of Directors, noted that the pass-through of funds to Kansas, Inc. had the same effect as if the funds originated from Kansas, Inc. He also mentioned that the suggestion to utilize the National Association of State Development Agencies (NASDA) for the review originated with the Secretary of the Department of Commerce. Mr. Warren mentioned the role of the evaluation committee, made up of four members of the Joint Committee on Economic Development and four members of the Kansas, Inc. Board of Directors.

Mr. Warren stated that the major conclusions of the study team were extremely positive and contain no significant recommendations in terms of correcting inadequacies or changing direction. He pointed out the findings that KTEC's accountability systems are among the most advanced in the country and that its current programs are well within its legislative mandate. Mr. Warren advised that relationships with other economic development agencies are very good at the staff level but somewhat strained at higher levels. He said the recently established Economic Development Coordinating Council could result in better communication and working relationships.

Bill Brundage summarized KTEC's response to the evaluation (Attachment 2). He said KTEC had concerns about providing the funds for the review but there were no other sources available. He also said KTEC was originally apprehensive about NASDA being selected to do the evaluation but ended up being pleased with the composition of the review team. Dr. Brundage referred to earlier discussion about the conclusion that KTEC is underfunded in comparison to other states and that the KTEC has partially compensated for this by leveraging $22.5 million in state funds with $50 million in private and federal funds.

Dr. Brundage quoted several statements from the NASDA report relating to the positive findings on KTEC's accountability. He also quoted from the report conclusions that the agency has stayed within its legislative mission. He described several instances of cooperation and coordination between his agency and other agencies involved in economic development efforts.

Chairman Kerr asked about the KTEC tracking system. Dr. Brundage said their software was developed by a Topeka group for about $20,000 and an additional $2,000 has been spent on later modifications. Dr. Brundage discussed the activities of the agency for 1992: Return on Public Investment model, review of position descriptions, strategic plan, increased public information, telecommunications projects, commercialization of technologies, promotion of indutrial agriculture and efforts by the Centers of Excellence.

The Committee was also provided with a memo from KTEC (Attachment 3)

Senator Vidricksen moved that the minutes of the January 23, 1992 meeting be approved. Senator McClure seconded the motion, and the motion carried.

The meeting was adjourned at 9:00. The next meeting of the Committee will be Tuesday, January 28, 1992.

Date 1/24/92

SENATE ECONOMIC DEVELOPMENT
VISITOR SHEET

(Please sign) Name/Company	Name/Company
Bud Grant / KCCI	
Terry Denker / Ks. Bd of Ag.	
Kevin Carr / KTEC	1
ERIC SEXTON / WSU	
Charles Warren / Kansas Inc.	
Bill Brundage - KTEC	
Cindy Diehl - KTEC	
Janice Rutherford KTEC	
Geoff Hughes / KSU	
Vivian Tinsley KTEC	

Management Review of the Kansas Technology Enterprise Corporation

The National Association of State Development Agencies

National Consulting Service

January, 1991

Kansas Inc.
400 S.W. 8th Street, Suite 113
Topeka, Kansas 66603
(913) 296-1460

Attachment 1
1/24/92
Sen. Ecc. Dev.

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Executive Summary

This report compiles the findings resulting from an on-site peer review of the Kansas Technology Enterprise Corporation conducted by the National Association of State Development Agency's National Consulting Service under contract to Kansas Inc. The work plan involved three on-site visits comprised of a two-day Resource Analysis and Needs Assessment by the NASDA project manager to identify the specific issues and questions to be addressed, and two longer Management Reviews conducted by a six member management review team selected for their expertise and experience with the specific types of areas that cover KTEC's programmatic and/or policy focus.

The KTEC program is found to be a unique and effective mechanism for promoting technology development among Kansas' businesses. It represents the kind of public/private partnership that many states are trying to build. However, the KTEC partnership should maintain its technology focus, so that this valuable organization can continue to function most effectively without diluting its mission. As such, it is one key component of a strong Kansas economic development team, which includes, among others, Kansas Inc. and the Kansas Department of Commerce.

KTEC's programs are market-driven and strongly supported by industry. The agency is entrepreneurial in nature, has a "can do" attitude, and has developed a sophisticated array of program initiatives and management practices that rate highly when compared to other state technology development programs or economic development agencies in other states.

KTEC should work within the framework developed by Kansas Inc., cooperating closely with and assisting the Kansas Department of Commerce in pursuit of the many economic development opportunities that are available to the state.

Commerce should be able to look to KTEC as an ally and technical expert as it promotes business retention and expansion, works to attract new investment to the state, explores the possibilities in international trade, provides financing assistance to support its companies and develops the network of Kansas communities that make up the local support for economic development.

It is recommended that the key players on the Kansas "economic development team" work together to clarify their roles and maintain management coordination and communication. In this regard, the peer review team believes that the ad hoc planning group convened by Kansas Inc. should be continued as the Kansas Economic Development Coordinating Council, for the purposes of program coordination and communication among all participants. Composition of the group can be determined by Kansas Inc. which should convene the group at regular intervals.

Together, KDOC, KTEC and Kansas Inc. can ensure that the resources and expertise needed are available and properly applied to best provide jobs and economic development in Kansas.

Overview and Methodology

On July 25, 1991 Kansas Inc. executed a contract with the National Association of State Development Agency's National Consulting Service to conduct a review of the organization and activities of the Kansas Technology Enterprise Corporation. The interim assessment was designed to examine the efforts of the Kansas Technology Enterprise Corporation (KTEC), its programmatic results as compared to similar efforts of other states, the structure of the technology development partnership in Kansas and the process by which this effort is managed by the state, and to identify options and issues for further improvement.

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The two-phased work plan involved a two-day Resource Analysis and Needs Assessment by the NASDA project manager to identify the specific issues and questions to be addressed, and a longer Management Review conducted by a six member management review team (Exhibit A) of professionals qualified to conduct a peer review of the agency. The Management Review consisted of a two-part visit: 1) a **Technical Assessment** of the agency to determine KTEC's programmatic performance and provide the agency with options which can be used in future performance evaluations; and, 2) an **Organizational Analysis** with KTEC, the Kansas Department of Commerce (KDOC) and Kansas Inc. to help the "key players" involved with KTEC identify their respective roles, goals, objectives and opportunities for mutual support and coordination. The goal of these reviews was to enable KTEC to excel in serving the Kansas companies, citizens and public sector delivery systems.

Following a review of the agency's program performance and impact data made available by Kansas Inc., members of the Management Review Team made three on-site visits to KTEC. The first visit was made by Ann Osborne, the Team Project Manager, on September 30 and October 1 to provide a quick overview of the present situation in Kansas in order to identify the priority issues for the Management Review Team's attention and focus. The second visit involved Walter Plosila, Teresa Gidley, E. Blaine Liner and Ann Osborne who completed the Technical Assessment on November 5 and 6. Using their findings, Miles Friedman and Robert Leak conducted the Organizational Analysis on November 13 and made an oral presentation of the Management Review Team's preliminary findings to the Kansas Inc. Board of Directors and the Kansas Joint Economic Development Committee on Thursday November 14, 1991.

Tecnnical Assessment Findings and Options

The Technical Assessment focused upon a limited review of KTEC to evaluate KTEC's performance and provide an assessment of the performance of KTEC in comparison with the best practices and standards among other state technology programs, and relevant options for improved performance. The review team interviewed public and private representatives as well as KTEC staff. The review team worked closely with Kansas Inc. staff and met with several individuals from the executive and legislative branches of government. The team did not conduct in-depth reviews of individual programs, but rather provided a preliminary review based on both consideration of secondary materials and performance data and interviewing of key staff and program participants. The meeting agenda is contained in Exhibit B.

The Team notes, however, that because KTEC is a leader among the 45 states with technology development programs in undertaking peer reviews and insisting on performance accountability, there is a much greater amount of program and management data (qualitative and quantitative) available than would otherwise be the case. This enabled the Team to be confident that even this short review could be anchored to previous in-depth analyses.

Program Review

The Management Review team interviewed the directors of the five Centers of Excellence, customers of the Research Applied Matching Funds Program, the director of an Industrial Liaison Office, the director of a Small Business Development Center, university officials, KTEC staff involved with administering programs, representatives of the KTEC and MAMTC boards, Department of Commerce staff, and state legislators. The team also reviewed the tracking system used by KTEC to monitor program activities.

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Centers of Excellence

The Centers of Excellence Program has established academic research centers in Kansas universities that undertake research and technology transfer activities having a particular focus toward economic development. Each center focuses upon differing industrial sectors and areas of innovation. The Centers include: the Advanced Manufacturing Institute at Kansas State University in Manhattan; the Center for Excellence in Computer-Aided Systems Engineering (CECASE) at the University of Kansas in Lawrence; the Center for Technology Transfer at Pittsburg State University in Pittsburg; the Higuchi Biosciences Center at the University of Kansas in Lawrence; and the National Institute for Aviation Research at Wichita State University in Wichita. The Centers of Excellence are using KTEC's sophisticated tracking system to track individual project outcomes, conduct biennial peer reviews and collect aggregate data upon each center to monitor performance and ensure maximum performance.

Centers of Excellence are perceived to have a positive impact upon Kansas universities, making them more aware of the private-sector business culture, more responsive to the needs of entrepreneurs, and focusing technologies into results-oriented applied/commercial areas. Since the Centers have only been in operation for three years and are still moving into maturation, which typically takes about five years, it is still too early to fully assess results and outcomes. As they evolve, the Centers must address the following issues which were identified by the Team:

1) The University systems under which Centers operate are currently not suited to timetables, funding requirements, equipment, and product delivery needs of industry. Mechanisms to enable the universities to provide greater flexibility should be investigated to facilitate Centers' ability to meet industry needs.

2) KTEC's innovative use of the five-year strategic plans for each Center of Excellence should be commended. The requisite annual update provides not only an excellent management tool for KTEC to monitor its objectives, but focuses the Centers' activities towards commercialization and industry-based clients. This resourceful accountability mechanism has not been used by very many other states to guide their Centers. However it is not clear that the recent internal reorganization will provide sufficient direction or management oversight for the Centers program.

Entrepreneurs receiving follow-on Applied Research Grants as a result of participation with the Centers Program offered feedback about the Centers Program. They noted that KTEC's participation within the Centers of Excellence has helped to begin the process to sensitize academicians to the research needs of technology-based companies. However, a wide gap remains among Center faculty and staff perceptions of the needs and culture of entrepreneurial start-up firms. The entrepreneurs agreed that the university is not normally a good place to design and construct market-ready prototypes because of stringent public bidding requirements, inattention to company timelines and financing deadlines, and a cultural orientation that does not "fit" with the fast-paced, just-in-time management styles of the majority of start-up companies.

Another hurdle to be overcome in the partnering of university and corporate projects is that of project ownership; once the university signs on, it becomes their project, subject to the university culture, attitudes, timelines and procedures of the particular university bureaucracy. Who is in charge, who makes the design decisions, who has the ultimate say when the equipment or structural components are purchased, are all issues that often create conflict between the "owner of the product" and the university researchers.

The business owners commended KTEC on the level of entrepreneurship that it has been able to foster among the research faculty involved through the Centers of Excellence. They commended these faculty who

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were being asked to think in ways that were not only traditionally foreign to academicians but are currently not-rewarded within the "publish or perish" university culture.

Applied Research Matching Fund

Applied Research Matching Funds are awarded on a competitive basis to private corporations or academic-corporate partnerships for projects that apply the existing store of scientific and technological knowledge and lead to new technologies, prototypes, or bases of knowledge that can be commercialized. Awards can be used for product design and development to the prototype stage, but are not intended to support basic research, technology transfer, seminars, training, facility improvement, market assessment or product development beyond the prototype stage. The applicant must provide 60% of project costs.

Applied Research Matching Grants appear to have performed in a manner to achieve the results for which they were designed. Conversations with Kansas entrepreneurs who received grant awards indicate that the program is not only well received in the marketplace, it has acted to encourage individuals and small companies to fast-track sound innovative concepts and designs to product commercialization. National Science Foundation studies and other national reviews of applied research funding programs have found that applied research matching grants are the most effective way to encourage commercialization and applied research.

Participants in the program noted that KTEC took an active interest in the specific research and development needs of their projects and introduced them to firms, university faculty, and financial investors. KTEC staff offered a rare spirit of encouragement that few of the entrepreneurs had experienced before. KTEC maintained ongoing contact with the companies throughout the grants application process and throughout the term of the project.

KTEC has benefitted from research and advice of other states in the development of its program guidelines and peer review processes. The Team commends KTEC for its development of a concise and informative brochure outlining the guidelines and application procedures for participation. The Management Review Team notes that KTEC has networked and communicated with states such as Ohio, Pennsylvania, and Indiana about guidelines and policy improvements to maintain a competitive position in Kansas.

KTEC has instituted an original methodology for the evaluation of its proposals. The weighing of the various proposal requirements (Commercial Potential 50%, Technical Merit 30%, Financing Plan 15%, and Technological Infrastructure development 5%), coupled with the Expert Peer Review and Market Feasibility Evaluations is an innovative and sophisticated approach to proposal evaluation which should result in greater project yields, independent technology-specific decisions, and effective leveraging of public-sector resources. The effective peer review system and outside feasibility analysis give the Management Review Team confidence that this is good mechanism for allocating the scarce resources available to KTEC (funds, time, staff, public/private participation etc.) for tech transfer.

The recent payback provisions instituted for the applied research grants is useful and will provide greater leveraging of public funds. This payback provision is proper for KTEC to implement; this decision follows the model of other states and offers a mechanism to recapture funding and ensure accountability for the recipient firms.

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Other KTEC Programs

Training Equipment Grants provide a good way to leverage private money for equipment purchases within university centers. Pennsylvania's program has been successfully reauthorized by the legislature, despite tight budget constraints. The Pennsylvania program
requires a three to one match of private dollars to program dollars for the purchase of engineering equipment. This program enables Kansas to focus its technology training efforts among community colleges and vocational-technical schools to encourage technologically oriented technical training. This is an appropriate role for KTEC to undertake and complements training programs offered through the Kansas Department of Commerce and the Kansas Department of Education.

Ad Astra Fund offers equity capital for seed level companies. Venture capital is an important issue facing Kansas. The Ad Astra Fund has not had a strong history for leveraging KTEC's investment and raising private-sector funds. To date this remains a concern for KTEC. However, the inability to raise blind-pool venture capital funds is a trend among technology seed funds across the United States. The issue of how to effectively leverage private sector dollars for technology investment funds is one that many states are grappling with. Tennessee has experienced similar obstacles in its Technology Seed Fund Program, despite strong state investment tax credits to promote investment. Staff members at KTEC and KDOC continue to cooperate to secure private venture capital investment for start-up firms in Kansas. Both KTEC and KDOC should continue to work together to investigate new options to address this seed capital gap.

Technology Transfer and Referral Services is a legislatively mandated program to establish a clearing-house for technology transfer and referral services. KTEC is implementing a computerized technical information data base in response to this mandate. Many states have tried to develop such a data base, with varying levels of success. The Management Review Team would caution KTEC to make the data base easily accessible to firms, marketing the services in such ways that have clear benefit to Kansas firms so that the program has meaningful results. Only with this approach will this program generate a good return on KTEC's original investment.

Industrial Liaison Offices were established by the legislature to help firms identify and solve production or other technical problems, improve production processes and capitalize on advanced production techniques and technologies. Careful and deliberate delineation should be maintained between the legitimate technology efforts and technical assistance services and those of sister agencies such as the Department of Commerce, the Cooperative Extension, and others.

Special projects enable KTEC to achieve an important flexibility to quickly meet special needs and respond to one-time technology-related issues. It is useful to note that funding commitments for special projects have decreased from 10% to 8% since last year which is a prudent trend. Linking activities supported by these funds to the strategic plan now being developed should provide some broad guidelines for responding to emerging opportunities. Special projects funds should continue to be utilized to take advantage of unique windows of opportunity. Conversely, new program components of ongoing duration should be submitted for legislative approval as budget line items.

The **Innovative Technology Enterprise Corporation (ITEC)** was institutionalized in March of 1991 as a result of a special project to protect the intellectual properties of entrepreneurs. The newly formed corporation operates through a public-private board. The agency's mission is to provide structure for assisting innovators in the commercialization of new ideas. The agency provides counseling, referrals, training, direct consulting and small grants to assist inventors who have valid ideas for new products and processes.

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This concept offers an interesting approach to handling inventors and their unique needs. Very few states have contributed resources to this niche as it is a time and labor-intensive initiative which achieves measurable results over a long term. It is recommended that the current vacancy to the ITEC board be filled so that the organization can operate effectively. KTEC should also consider cross-training another staff member about the unique requirements of inventors and intellectual property issues because this agency currently revolves around a specifically skilled and uniquely trained person.

Mid-America Manufacturing Technology Center (MAMTC) represents a clear-cut opportunity to position Kansas as a national model for technology transfer and innovation. The NIST grant is a "feather in the cap" for the state, whose impacts should be clearly articulated and understood by public-policymakers and private companies. The award of this grant should not be taken lightly; organizational start-up should be fast-tracked to ensure that MAMTC quickly begins implementing the innovative ideas expressed in its proposal, including the mobile manufacturing plant and direct manufacturing assistance services. MAMTC offers the vehicle to improve the manufacturing outreach efforts for all KTEC and KDOC programs.

The emergence of the MAMTC center provides a unparalled opportunity to focus the definition of the liaison centers as strictly targeted toward technology-oriented services by co-locating MAMTC field offices with Industrial Liaison offices, Small Business Development Centers, Community Development Corporations, Department of Commerce Regional Offices and University Centers of Excellence. The Center for Technology Transfer in Pittsburg offers a good model of this coordination and sharing of resources. Under this one-stop shop approach, the firm can achieve its technology-assistance and business/management goals more efficiently and service providers can more effectively hand-off referrals among one another. Through this one-stop-shop approach, KTEC could also implement its off-site tracking network, providing a unique tool to coordinate the services offered by all field delivery agencies.

The MAMTC program offers a rationale for technology transfer to be implemented on a regionalized basis. MAMTC must be structured so that it has the flexibility to respond to midwestern and Kansas firms and be industry driven. It is logical to assume that the MAMTC board will reconsider its organizational status in light of the recent Attorney General opinion. If experience shows that the organizational structure is an impediment, it should be revisited at that time. MAMTC is to be commended for streamlining its delivery system by integrating Centers of Excellence as outreach offices for MAMTC field offices. The mobile factory is a unique concept which will be particularly appropriate in delivering technology transfer services to the more rural areas of Kansas.

Overall Review of KTEC

In regard to the Technical Assessment Team's overall review of KTEC, we found the agency to have undertaken a wide range of programs consistent with both the 1986 Economic Development game plan mandated by the Legislature and its missions and goals. We did not find any major examples of KTEC straying from its statutory goals and mission. We found an agency that is entrepreneurial in nature, has a "can-do" attitude, and has developed a sophisticated array of program initiatives and management practices that rate highly when compared to either other state technology development programs or economic development agencies in other states.

KTEC's programs are indeed market-driven and strongly supported by industry. However, they are designed by policy and operational guidelines to protect both the integrity of the programs and assure full accounting and fiscal integrity in the use of the public sector resources. **Unlike technology programs in other states, KTEC limits its matching grants to in-state firms and encourages the Centers of Excellence to do likewise.**

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The results from State technology development investments are likely to be seen over the long term; at a minimum of eight to ten years before significant results are obtained. KTEC has an appropriate mix of programs and has emphasized in its management that economic development/commercialization of its investments is always the top priority. Consequently, Kansas is seeing significant results somewhat sooner at least in the case of some of its programs. But maximum results will require patience and a willingness on the part of all players to invest in technology initiatives over the long term.

KTEC reports that through June, 1991, the State's investment of $22.5 million has leveraged $50 million in other resources, including $11.5 million in venture capital. This is more than $2 in match for ever $1 of state investment. KTEC also reports 49 start-ups assisted; 25 firm expansions; 463 employees trained; $17.2 million in increased sales by firms; more than 3300 jobs created; 100 new technologies introduced; and 61 patents issued. While the Team did not verify these numbers, these results in the short-term compare most favorably to other state technology development programs, particularly in regard to job generation, patents issued and dollars matched.

The structuring of KTEC as a quasi-private entity has placed Kansas in a leadership role as other states are now only discovering the need to build a long term perspective into their technology efforts through creation of new structures, such as intermediary organizations.

In designing its technology programs, Kansas was also a leader by dedicating the state lottery as a source of revenue for the program. However, recent events have called in to question whether KTEC's program will continue to be supported by the lottery. It is important, therefore, for the State of Kansas to re-establish one of the design characteristics of KTEC -- more predictable funding through the state lottery or other dedicated revenue source.

It is also important to continue the semi-autonomous nature of the Corporation. This does not mean that the Governor cannot provide input or direction to the Corporation. Through appointments to the Board, through representation on the Board by her Secretary of Commerce, through recommendations on the budget, and in many other ways the Administration has considerable input and control over KTEC. In addition, KTEC's staff has acted like a state agency in terms of its compliance with state administrative requirements. Regardless, KTEC has acted as a state agency through the use of the state's accounting system, procurement system, consulting with state officials and obtaining "state approvals" even when it did not need to do so.

KTEC in most of its practices has recognized its responsibilities to its primary investor -- the state government of Kansas. It has acted prudently and conservatively in managing itself both like a private corporation and a state agency, giving state government a dual set of controls and accountability systems. While the establishment of such a dual system of controls is not easy for a start-up organization to accomplish, the Team believes that KTEC has acted prudently in doing such.

The Team found that the one significant underlying problem that must and needs to be addressed is one of communication with the Administration and its senior level officials and agency heads. The Team believes that this has been the cause underlying the friction and start-up problems in initiating the Manufacturing Technology Transfer Center. While this specific problem appears to have been resolved, the Team suggests that the underlying cause still remains and must be addressed.

While the term "accountability" was used in widely varying and differing ways by persons who were interviewed, the Team believes KTEC has a more than adequate set of management systems and protocols; so much so that they would be the envy of many of their counterparts elsewhere in the United States. On

the other hand, KTEC's relations, both currently and in the past, with the Department of Commerce and the Governor's Office are more isolated than found elsewhere in other states.

While KTEC is fully within its statutory powers to independently operate its programs, it must realize that technology development is but one part of a larger set of economic development policies and programs. For KTEC's programs to succeed, they need the support of the entire state government apparatus. They cannot operate in isolation.

While we do not believe that KTEC believes otherwise, we do suggest that an active effort be undertaken by KTEC, by the Kansas Department of Commerce, by the Governor's Office, and by others to improve their interaction and communications at senior levels of the State Government. Elsewhere in the country, whether the technology development programs are within or outside the direct control of the Department of Commerce, it is rare for all the parties involved not to recognize their complementary efforts and mutual needs.

KTEC has, since 1986, made conscious efforts to learn from other states as they have developed new programs and initiatives. As a result, programs such as the Centers of Excellence and the Applied Matching Grant programs have some of the more refined guidelines in regard to leverage/match of dollars, performance, reporting, and private sector involvement. Kansas has both learned from experience elsewhere in addition to charting new ground. Market reviews for the Applied Matching Grant program are unique in the country. Annual and now biennial peer reviews of the Centers through an outside (out-of-state) review is as an intensive a peer review system of any Centers program in the U.S.

In their enthusiasm to address the needs of the technology community, however, KTEC has moved in recent years into areas that have appeared to outsiders to either be broader economic development programs or a duplication of ongoing efforts. The Management Team's review of these instances generally found that many of these perceptions came from KTEC's recent efforts to establish two Industrial Liaison Offices.

In hindsight, these Offices might have been more appropriately called "Technology Liaison Offices." In addition, a specific list of activities each office was to primarily perform might have avoided instances where it appeared these Offices were undertaking activities already being performed by other agencies or departments. In defense of the Industrial Liaison Officers, most firms have multiple needs and where the office was knowledgeable of other areas, it was only natural to assist. KTEC and the Kansas Department of Commerce, in the short term, need to clearly define the primary activities of each in regard to the duties of Liaison Officers versus other business assistance operators whether they be Small Business Development Centers, Certified Development Corporations, or Regional Offices of KDOC, provided that they are re-established. In the long term, the Team has made a separate suggestion to co-locate MAMTC with the regional offices of KDOC and other business assistance providers. Indeed, separate liaison officers may no longer be needed by KTEC as the MAMTC program comes on line.

Options and Suggestions

To the maximum extent possible, KTEC should focus on programs and initiatives that target technology -- whether it be applying or "spinning-in" technology or "spinning off" technology. Other business assistance service providers should be relied upon to the maximum extent possible for provision of other business assistance services. The relationship of KDOC and KTEC in regard to locating sources of venture capital or providing international trade assistance are both good examples of such a division of responsibility.

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As the Kansas Department of Commerce continues to broaden its efforts from a focus on recruitment to one based on building an entrepreneurial culture and business retention, KTEC itself could be a true resource to KDOC. In turn, it would be to KTEC's advantage to have KDOC improve its capabilities and focus on entrepreneurship and business retention.

The Team can cite two examples of how this relationship might work in the future. In the international trade area, KTEC can rely on KDOC's expertise, foreign offices and capabilities to help identify foreign partners, investors and export sales for Kansas technology companies in general and for matching grant recipients and Center participants specifically. The excellent staff working relationships in international trade should be replicated at the top levels of both organizations in all matters involving international trade.

A second example of collaboration between KTEC and KDOC is in the area of quality management. The opportunity represented by landing one of the few NIST-sponsored Manufacturing Technology Centers in the U.S. gives Kansas expertise at MAMTC that will be available to few states. In turn, MAMTC can extend its limited resources by helping to "train the trainers" -- that is, helping to train personnel at the Centers of Excellence and elsewhere that KDOC can call on to meet the total quality management needs of firms that are not likely to be serviced by MAMTC, e.g., services, manufacturing firms not incorporating technology, etc.

Finally, the Team suggests that KDOC and KTEC, in a cooperative effort, commission an outside economic analysis of the technology components of the Kansas economy. This would help identify trends and developments in the Kansas economy and strengths and weaknesses of its technology firms and the technology development system. It would assist Centers of Excellence in focusing on growth areas of technology and it would help target business assistance services. In the Team's review, we found that no one had a good handle on Kansas' strengths and weaknesses in technology development.

Organizational Analysis Findings and Options

The third team visit to Topeka was conducted by NASDA's Executive Director Miles Friedman and consultant Robert E. Leak, the former head of The Research Triangle Foundation in North Carolina and former head of economic development programs in North and South Carolina.

This team has been involved throughout the study for the purposes of examining the structure of the technology development partnership in Kansas and assessing the process through which this effort is managed by the state. This site visit was conducted so that the team could interview key leaders of KTEC, Kansas Inc., the State Legislature, the Executive Branch and the private sector. The site visit culminated with a report of preliminary project findings to a session of the Joint Committee on Economic Development and a meeting with the Board of Directors of Kansas Inc.

Interviews were conducted by Friedman and Leak during the course of the visit on a confidential basis. They ranged in duration from thirty minutes to two hours, and included on-site meetings with representatives from the Center of Excellence in Lawrence, Kansas.

Remarks made by Miles Friedman to the Joint Committee on Economic Development and the meeting agenda can be found in the attachments.

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Issues

The team was impressed quickly by two overwhelming observations: One, that there is a strong, apparently effective partnership at work for technology development in Kansas, and that it enjoys very strong support, particularly from the state legislature. Two, that the divisive and prolonged political battle has created an atmosphere of personal animosity and institutional conflict that is interfering with everyone's ability to serve the state effectively.

The team determined that the political issues, as well as the substantive issues, would have to be dealt with if economic development efforts in the state of Kansas were to move forward effectively.

At the root of the conflict appeared to be concerns by the executive branch that the KTEC program be more accountable to the elected officials who are charged by the voters with monitoring how public funds are being used. This concern was exacerbated by the feeling that KTEC might be moving beyond its central mission and beginning to take on functions more properly belonging to the executive branch through its Commerce Department.

On the other hand, KTEC felt that its ability to operate had been hampered by proposals to change the location and structure of the organization. In turn, legislators felt that a program they took pride in "parenting" was under fire from the executive branch.

Findings

The issue of accountability is one that can plague any partnership between the public and private sectors. The use of quasi-public or quasi-private, nonprofit organizations is quite common among the states. They are generally used for reasons such as attracting private expertise, leveraging private capital, avoiding unduly restrictive strictures on public lending, supplementing the organizational resources of government, or otherwise filling a gap in service provision.

In general, such entities are created for a specific and narrowly-defined, special purpose, such as developing technology industries, providing export financing or conducting specific types of international marketing activities. In virtually all cases, there are provisions made for accountability to the public sector, including, most commonly, the use of boards of directors that are subject to some executive branch controls. In addition, program monitoring and reporting to the legislature is generally required when state appropriations are to be used by the organization.

We found that KTEC has the potential to be the kind of public-private partnership that most states strive for. The board is subject to gubernatorial appointment, and there are strict procedures in use for monitoring both the use of funds and the performance of programs. It would seem that KTEC has sufficient mechanisms in place to allow for effective monitoring and control by the executive and legislative branches. The relevant legislators appeared to be satisfied, although the executive branch was clearly frustrated.

There are some indications that KTEC is beginning to become involved in such areas as industrial attraction, international trade, business finance, and community development. While all of these are natural outgrowths of the work KTEC is charged with and capable of doing, it is more appropriate that KDOC take the lead in these areas, with KTEC providing support when the technology focus overlaps.

KTEC should be working hand in glove with Commerce, which should have the lead role, as the appropriate "quarterback" of the Kansas economic development team.

Options

If the program is successful, as appears to be the case, and if it has adequate vehicles to allow for accountability, as also appears to be the case, what can be done to ensure smoother operations from here on?

The ability of the governor to have a level of comfort with the program is certainly a legitimate desire. It was suggested, in this regard, that the governor will have opportunities to pursue this objective through an upcoming appointment she can make to fill a vacancy on the KTEC Board.

It is also suggested that the Secretary of Commerce participate on a more frequent and regular basis in KTEC Board meetings as often as possible. The governor and secretary could also choose to meet periodically with members of the Board (in groups or as a whole) to ensure that they have input to the agenda for KTEC.

While KTEC may be one of the best conceived and executed vehicles for technology economic development in the country, it will only weaken itself if it moves too far afield in its activities.

Effective organizations are often the victims of their own success. The more they accomplish, the more opportunities they generate, and the temptation to take on an increasingly ambitious work program can be compelling. Unfortunately, this can also be the downfall of any organization, particularly one that is set up to pursue a particular set of activities.

The Kansas Legislature carefully and artfully structured KTEC to be an effective advocate and support mechanism for technology industries, and this is one of the reasons for its tremendous success in the relatively short period of three years. This carefully crafted program could be in danger of losing not only executive branch support, but also credibility with the private sector and legislature, if it wanders into playing the role of an all purpose economic development agency.

One logical example of how KTEC and KDOC work together is presented by the case of brokering joint ventures between Kansas companies and international partners. Ideally, the excellent international division of the Commerce Department should have the lead on outreach and initial contact activities, and then should be able to draw upon the technical expertise of KTEC to help broker joint ventures that bring new technologies and/or capital to Kansas.

We were pleased to see that this kind of approach appeared to have the support of all concerned. In fact, the general idea that KTEC should do what it does best and play a specific, albeit important, role in the overall development team, was one that met with universal agreement. That Commerce should be the captain of that team, with Kansas Inc. lending a guiding hand, was also a widely popular concept.

The question is, of course, how do you get the team to function effectively?

The NASDA management team agreed with the NASDA technical team that had visited the previous week, in that KTEC appears to be a well structured and effectively functioning operation. Yet these assets can not be fully realized until KTEC can begin functioning more routinely as part of a Kansas economic development team, of which Commerce is the captain.

In this regard, it is imperative that the players begin to work together more closely and on a sustained basis. The key option put forth by the NASDA management team was that a Kansas Economic Development Coordinating Council be convened that would include all the key players (e.g., Commerce, Kansas Inc.,

KTEC) and it must meet regularly. The group can be convened by Kansas Inc., and can name its own chair or choose to rotate the chair amongst the members. Any additional members should be selected and agreed to by the parties named above, but in no case should the group be comprised of more than six to eight organizations. Each participating organization should be represented by its top official.

This Coordinating Council is not envisioned as a new agency or nonprofit organization. It should have no life of its own, no budget and no legislative authority. Rather it is a committee that would exist purely to facilitate communication among its members and, hopefully, would facilitate coordination, in practice, of the members' programs. In effect, the Council has its roots in an ad hoc group that has already met, having been convened by Charles Warren at Kansas Inc. with the encouragement of Laura Nicholl, the Secretary of Commerce.

The most important idea behind the Coordinating Council is to bring the key players face-to-face on a regular basis, so as to head off potential problems and create more opportunities to work together.

In any event, we felt it was essential to declare an end to the battles that have engulfed KTEC, the executive branch and the legislature over the past months. No one wins in this kind of environment, and everyone agreed that the parties must now "swim together or sink separately." There are indications from all quarters of support for the cooperative approach suggested by NASDA: Laura Nicholl was the person who first introduced NASDA to the scene as a prospective consultant, and Bill Brundage and the legislators all appear to be pleased with the results of our work. Each has committed to begin working together.

An additional issue raised was whether the Commerce Department has the resources it needs to effectively fulfill its role. Those interviewed, exclusive of Commerce representatives, proposed that, in fact, KTEC may have been moving into new areas out of the perception that Commerce resources were lacking.

There were indications that the legislature would be interested in exploring what areas, if any, needed bolstering at Commerce. Possible areas in which additional resources might be needed were mentioned, including international trade, finance and community development. There was also mention of reexamining the need for a Commerce field network and redefining the role that might play.

Thus, in regard to helping to limit KTEC activities to its core mission, the feeling was that if Commerce had sufficient resources, KTEC would be able to play a support role to Commerce. This would be a far more effective approach to overall economic development, and the issue of necessary resources may be one that bears further exploration.

Finally, new ideas should continue to be pursed that build upon the strong base provided by KTEC. For example, KTEC might want to explore initiation of a proactive technology licensing consortium that could work to help root out new patentable technologies that may then be commercialized.

Summary of Findings and Options

KTEC Management and Operations

KTEC offers one of the most comprehensive and sophisticated technology development programs in the country. However, individual programs tend to be under funded relative to other states.

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The accountability systems in place (comprehensive tracking system, use of the state's procurement and budget offices, annual independent audits, extensive use of peer review, and an independent board of directors) are among the most advanced in the country.

The organizational culture is one which encourages entrepreneurship and enables KTEC to be responsive to opportunities. This must continue to be balanced with the need to maintain focus. The strategic plan which is currently under development should provide an opportunity to set priorities and fine-tune program goals.

KTEC has been more successful than most states in encouraging the involvement of small businesses, who tend to be most in need of technology assistance, in its programs.

KTEC's authorizing legislation permits and requires a broad range of activities. Current programs, as constituted, are well within this legislative mandate, which appears to have continuing support from the legislature.

The analysis of the economy presented in "Kansas Economic Development Strategic Plan" paints the picture of the economy in broad strokes. A more detailed analysis of the specific technologies important to those industries which are important to Kansas and of the technology development systems for those technologies would help to target programs. Such a study by outside experts could be jointly funded by Kansas Inc., KTEC and KDOC.

KTEC Programs

Centers of Excellence

Those interviewed believed that the Centers have had a positive influence on the Universities, making them more aware of and responsive to the needs of private industry.

The University systems under which the Centers operate are not always suited to industry needs. Mechanisms to allow greater flexibility in equipment procurement and staffing should be explored.

KTEC's innovative use of five-year strategic plans as a tool for managing the Centers is to be commended.

Coordination with the Applied Matching Fund program is excellent, providing a means to assist in the commercialization of more basic work done at the Centers.

Applied Research Matching Fund

Virtually everyone contacted for this review was enthusiastic about this program. It is perceived to have been a major contributor to several companies' product innovations. (This is in keeping with findings by the National Science Foundation and other national studies that this type of grant is an effective way to promote commercialization.)

The use of both scientific and marketing reviews for proposed projects is exemplary.

The recent change from a "grant" to a "fund" with a payback provision is in keeping with national trends and should help sustain an ongoing program.

MAMTC

The concerns over the organizational structure and location of the MAMTC appear to have been resolved for the short term. Immediate attention must now be given to implementing the proposed program.

The size and scope of MAMTC activities offers a new opportunity to rethink and redefine the service delivery system for small business assistance in Kansas. The recently initiated ad hoc planning group provides a good start.

Other Programs

The **Training Equipment Grants Program** is targeted at supporting the technology training efforts of educational institutions; KTEC's role in providing equipment appears to be appropriate to its mission.

The **Ad Astra Fund**, like most state venture capital funds, has had difficulty in raising private sector dollars. Staff should continue the good working relationships with Department of Commerce staff and investigate other options to address these capital needs.

Special Projects funds allow KTEC to respond to emerging opportunities, allowing needed flexibility in program operations. Linking activities supported by these funds to the strategic plan now being developed should provide some broad guidelines for such activities. Special projects funds should continue to be utilized to take advantage of new windows of opportunity. Conversely, new programs components of ongoing duration should be submitted for legislative approval as budget line items.

New **Ideas** should continue to be pursued that build upon the strong base provided by KTEC. For example, KTEC might want to explore initiation of a proactive technology licensing consortium that helps root out new patentable technologies that may then be commercialized.

External Relationships

Staff relationships between KDOC and KTEC appear to be good, especially in the areas of international trade and finance programs. Relationships between top management are somewhat strained. The strategic planning process and the ad hoc planning group recently convened by Kansas Inc. can provide opportunities to smooth these relationships. Apparently, the ad hoc planning group has already helped make strides in the right direction.

Among those interviewed, there was unanimous agreement that all of KTEC's activities should continue to be focused on technology, while KDOC should continue to provide leadership on general business assistance, international trade, tourism, and industrial recruitment. KDOC should serve as a coordinator and "packager" of services. KTEC should be a valuable resource to KDOC in this effort.

The public-private partnership upon which KTEC has been built has created strong support from the private sector and has provided for accountability to the public sector. KTEC's organization has allowed it to be a responsive, yet patient tool for investment in Kansas' technology base.

Conclusion

It appears that KTEC plays a vital role among the players who comprise the Kansas economic development team and is a superb vehicle for pursuing technology development. However, it should not compromise its effectiveness by diluting its mission.

Rather, KTEC should work within the framework developed by Kansas Inc., cooperating closely with and assisting the Kansas Department of Commerce in pursuit of the many economic development opportunities that are available to the state.

Commerce should be able to look to KTEC as an ally and technical expert as it promotes business retention and expansion, works to attract new investment to the state, explores the possibilities in international trade, provides financing assistance to support its companies and develops the network of Kansas communities that make up the local support for economic development.

Together, KDOC, KTEC and Kansas Inc. can ensure that the resources and expertise needed are available and properly applied to best provide jobs and economic development in Kansas. The atmosphere appears to be clearing and a new rededication to cooperation may be emerging. We hope that the progress made by the ad hoc planning group (referred to earlier) will be continued in the form of an ED Coordinating Council.

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Attachment A
Management Review Team Qualifications

The Management Review Team was selected through consultation between Kansas Inc., KTEC, and NASDA. Priority was given to contracting with those individuals whose names were mentioned most often during the interview process, however in several cases, scheduling precluded their participation. The team members were selected for their expertise and experience with the specific types of areas that cover KTEC's programmatic and/or policy focus. The NASDA Management Review Team represents the four priority areas outlined in the contract:

Robert Leak is a former state economic development director in North Carolina and South Carolina. He served as the head of The Research Triangle Foundation in North Carolina and has a strong understanding of the role of an integrated high technology organization in a state's total economic development system.

Walter H. Plosila is the President of the Montgomery County High Technology Council in Rockville, Maryland. He developed and established Pennsylvania's Ben Franklin Technology Program. He is a nationally-recognized consultant in the field of high technology, public-private partnership initiatives, and technology transfer.

Teresa R. Gidley manages the Research and Technology Programs of the Michigan Strategic Fund (MSF), Michigan Department of Commerce, where she is responsible for negotiating and monitoring support of the state's Centers of Excellence. Prior to joining the MSF, she managed technology transfer programs for the Industrial Technology Institute. Dr. Gidley's consulting experience includes extensive experience evaluating Industry/University Cooperative Research Centers for the National Science Foundation; identifying ways to improve relationships with state government for the National Academy of Sciences; and teaching research methods for managers for the National Technological University Management of Technology program. She is currently chairing a committee for the National Science Foundation to develop measures of technology transfer from centers. As a member of the National Governors Association Science and Technology Council of the States, Dr. Gidley will chair a group that will work with federal agencies to seek improved federal/state cooperation in science and technology programs. She recently co-authored a white paper on this topic for the Federal-State Dialog, National Academy of Sciences.

E. Blaine Liner is the director of the State Policy Center at the Urban Institute. He has been involved in the management of state and local government economic development and policy management programs for over 25 years. Mr. Liner recently directed the preparation of a performance monitoring system for state and local government economic development programs as part of a national effort to improve performance of development agencies. Most recently, Liner served as the principal investigator for a project to develop export market plans for five states in the Southwestern Bell service area. The research effort involved identifying sectors of

each state's economy that had competitive advantages in the global marketplace and matching these sectors to country imports of these products.

Miles Friedman is the Executive Director of the National Association of State Development Agencies. In the eleven years with NASDA, he has participated in peer reviews and evaluations of states' high technology programs, the development and fine-tuning of public/private partnerships, and the development of statewide strategies to achieve successful implementation and consensus for economic development programs.

Ann Osborne manages the National Consulting Service and is the Project Manager for the KTEC Management Review. For this particular project, Mrs. Osborne brings a particular expertise in the assessment of advanced technologies, including computer-aided manufacturing, robotics, and computer integrated manufacturing processes. She completed an assessment of the strategic facilities, equipment, resources, skills, and training necessary to support these strategic technologies for California University of Pennsylvania in 1988. Mrs. Osborne has participated in the strategic development of several advanced technology industrial parks (including strategic planning, financial packages, and consensus-building). She has also written grants for submission to the Pennsylvania Ben Franklin Advanced Technology Grants Program.

Attachment B
Technical Assessment Meeting Agenda
Kansas Technology Enterprise Corporation
NASDA Management Team Visit

Tuesday, November 5:	
8:30 a.m.	Meet at Kansas Inc. – briefing/review Peer Group comments
9:30 a.m.	Leave for KTEC Tour, meet KTEC staff
12:00 a.m.	Lunch at Kansas, Inc.
1:00 p.m.	KTEC Board of Directors Interview (Carol Wiebe, Lloyd Silver, and Representative Rochelle Chronister)
2:00 p.m.	Interviews – Directors of Centers of Excellence
3:30 p.m.	Meeting with Return on Public Investment (ROPI) Group
4:00 p.m.	Industry Liaison Program – Ivan Smith
4:00 p.m.	Intellectual Property – Clyde Engert
5:00 p.m.	Bill Brundage, KTEC President – Interview
6:30 p.m.	Dinner, hosted by Kansas Inc. – Topeka Top of the Tower (Charles Warren, Jerry Lonergan, Diane Gjerstad, Anthony Redwood, Ted Kuwana, Howard Mossberg, Timothy Donoghue, Bill Brundage, Paul Clay)
Wednesday, November 6	All interviews at Kansas Inc. Offices
8:00 a.m.	KTEC Staff (Cindy Diehl and Chris Cooper)
9:00 a.m.	Gary Reser, Governor's Legislative Liaison
9:30 a.m.	KTEC Staff (Kevin Carr)
10:00 a.m.	Private Business Clients of KTEC and Local Economic Development Representatives
10:30 a.m.	Marianne Hudson – ex–KTEC Staff and MAMTC

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11:30 a.m.	KDOC Staff – Carole Morgan, John Watson, an Steve Kelly
12:30 p.m.	Jerry Carr
1:30 p.m.	Wrap–up with Kansas Inc. Staff

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Attachment C
Organizational Assessment Meeting Agenda

Kansas Technology Enterprise Corporation
NASDA Management Team Visit

Wednesday, November 13:

8:30 a.m.	Meet at Kansas Inc. – briefing/review Peer Group comments
9:00 a.m.	Gary Reser, Governor's Legislative Liaison
9:45 a.m.	Harland Priddle, former Secretary of Commerce
10:30 a.m.	Tony Redwood, Institute for Public Policy and Business Research – University of Kansas
11:30 a.m.	Lunch at KTEC offices with Representatives George Dean and Rochelle Chronister (both are also members of the KTEC Board of Directors)
1:00 – 3:30 p.m.	Meet with Bill Brundage and KTEC staff
	Depart for Lawrence with Jerry Lonergan, Kansas Inc.
4:00 – 5:30 p.m.	Tour: Oread Labs – William Duncan Higuchi Bio-Sciences Center of Excellence – Charles Decedue
7:00 p.m.	Dinner with Charles Warren and Jerry Lonergan

Thursday, November 14:

9:00 a.m.	Meeting with Rep. Diane Gjerstad and Senator Dave Kerr.
10:00 a.m.	Presentation before the Joint Committee on Economic Development and the Kansas Inc. Board of Directors (Room 519-S, Kansas Statehouse).
12:00 noon	Lunch at Kansas Inc. Offices, with Kansas Inc. Board of Directors

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DRAFT

National Association of State Development Agencies (NASDA) Review of Kansas Technology Enterprise Corporation (KTEC)

Summary of Preliminary Findings and Options

This report summarizes the preliminary findings resulting from a limited review of KTEC conducted by NASDA under contract to Kansas Inc. The review team (Attachment A) interviewed public and private representatives as well as KTEC staff. Attachment B contains an interview schedule and a partial list of individuals interviewed. The review team worked closely with Kansas Inc. staff and met with several individuals from the executive and legislative branches of State government. The team did not conduct in-depth reviews of individual programs. Major findings regarding overall KTEC operations, specific programs, and external relationships are summarized.

KTEC Management and Operations

KTEC offers one of the most comprehensive and sophisticated technology development programs in the country. However, individual programs tend to be underfunded relative to other states.

The accountability systems in place (comprehensive tracking system, use of the state's procurement and budget offices; annual independent audits; extensive use of peer review; and an independent board of directors) are among the most advanced in the country.

The organizational culture is one which encourages entrepreneurship and enables KTEC to be responsive to opportunities. This must continue to be balanced with the need to maintain focus. The strategic plan which is currently under development should provide an opportunity to set priorities and fine-tune program goals.

KTEC has been more successful than most states in encouraging the involvement of small businesses, who tend to be most in need of technology assistance, in its programs.

KTEC's authorizing legislation permits and requires a broad range of activities. Current programs, as constituted, are well within this legislative mandate, which appears to have continuing support from the Legislature.

The analysis of the economy presented in "Kansas Economic Development Strategic Plan" paints the picture of the economy in broad strokes. A more detailed analysis of the specific technologies important to those industries which are important to

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Kansas and of the technology development systems for those technologies would help to target programs. Such a study by outside experts could be jointly funded by Kansas Inc., KTEC and KDOC.

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Those interviewed believed that the Centers have had a positive influence on the Universities, making them more aware of and responsive to the needs of private industry.

The University systems under which the Centers operate are not always suited to industry needs. Mechanisms to allow greater flexibility in equipment procurement and staffing should be explored.

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Coordination with the Applied Matching Fund program is excellent, providing a means to assist in the commercialization of more basic work done at the Centers.

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Virtually everyone contacted for this review was enthusiastic about this program. It is perceived to have been a major contributor to several companies' product innovations. (This is in keeping with findings by the National Science Foundation and other national studies that this type of grant is an effective way to promote commercialization.)

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The concerns over the organizational structure and location of the MAMTC appear to have been resolved for the short-term. Immediate attention must now be given to implementing the proposed program.

The size and scope of MAMTC activities offers a new opportunity to rethink and redefine the service delivery system for small business assistance in Kansas. The recently initiated ad hoc planning group provides a good start.

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Other Programs

The Training Equipment Grants Program is targeted at supporting the technology training efforts of educational institutions; KTEC's role in providing equipment appears to be appropriate to its mission.

The Ad Astra Fund, like most state venture capital funds, has had difficulty in raising private sector dollars. Staff should continue the good working relationships with Department of Commerce staff and investigate other options to address these capital needs.

The Technology Transfer and Referral Service is developing a database of technical expertise. Many states have developed such systems and have been disappointed in the level of use. KTEC should further study the experience of other states in order to identify potential barriers to use.

Special Projects funds allow KTEC to respond to emerging opportunities, allowing needed flexibility in program operations. Linking activities supported by these funds to the strategic plan now being developed should provide some broad guidelines for such activities. Special projects funds should continue to be utilized to take advantage of unique windows of opportunity. Conversely, new program components of ongoing duration should be submitted for legislative approval as budget line items.

New Ideas should continue to be pursued that build upon the strong base provided by KTEC. For example, KTEC might want to explore initiation of a proactive technology licensing consortium that helps root out new patentable technologies that may then be commercialized.

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Staff relationships between KDOC and KTEC appear to be good, especially in the areas of international trade and finance programs. Relationships between top management are somewhat strained. The strategic planning process and the ad hoc planning group recently convened by Kansas Inc. can provide opportunities to smooth these relationships. Apparently, the ad hoc planning group has already helped make strides in the right direction.

Among those interviewed, there was unanimous agreement that all of KTEC's activities should continue to be focused on technology, while KDOC should continue to provide leadership on general business assistance, international trade, tourism, and industrial recruitment. KDOC should serve as a coordinator and "packager" of services. KTEC should be a valuable resource to KDOC in this effort.

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The public-private partnership upon which KTEC has been built has created strong support from the private sector and has provided for accountability to the public sector. KTEC's organization has allowed it to be a responsive, yet patient tool for investment in Kansas' technology base.

CONCLUSION

The KTEC program is a unique and effective mechanism for promoting technology development. It represents the kind of public/private partnership that many states are trying to build. However, the KTEC partnership should maintain its technology focus, so that this valuable organization can continue to function most effectively. As such, it is one key component of a strong Kansas economic team, which includes, among others, Kansas Inc. and KDOC.

It is recommended that the key players on the Kansas "economic development team" work together to clarify their roles and maintain management coordination and communication. In this regard, we believe that the ad hoc planning group convened by Kansas Inc. should be continued as the Kansas Economic Development Coordinating Council, for the purposes of program coordination and communication among participants. Composition of the group can be determined by Kansas Inc. which should convene the group at regular intervals.

KANSAS
TECHNOLOGY
ENTERPRISE
CORPORATION

January 16, 1992

Dr. Charles Warren
Kansas Inc.
400 S.W. 8th, Suite 113
Topeka, KS 66603

Dear Charles,

Needless to say, KTEC is delighted with the conclusion of the NASDA Management Review. We have worked hard during our short history in order to make sure that Kansas will be a significant participant in the "global" economy. This evaluation confirms that KTEC is successfully fulfilling its role in technology economic development. We are particularly pleased with the statement on page 15, paragraph 8, which reads:

"KTEC offers one of the most comprehensive and sophisticated technology development programs in the country."

During the past year there apparently was a perception by some that KTEC, as a public/private partnership, was not as accountable as it would be if structured as a true state agency. We can understand this concern because it always has been our concern as well. Consequently, KTEC established strict procedures to assure accountability. This was done the first year of operation. Moreover, this is an ongoing process and will continue to be taken seriously. Our efforts are supported by the following comments from the study:

Pg. 2, para. 4
"...because KTEC is a leader among the 45 states with technology development programs in undertaking peer reviews and insisting on performance accountability, there is a much greater amount of program and management data (qualitative and quantitative) available than would otherwise be the case."

Pg. 6, para. 6
"KTEC's programs are indeed market-driven and strongly supported by industry. However, they are designed by policy and operational guidelines to protect both the integrity of the programs and assure full accounting and fiscal integrity in the use of the public sector resources."

Pg.7, para. 5
"...KTEC's staff has acted like a state agency in terms of its compliance with state administrative requirements even though it need not have done so. Regardless, KTEC has acted as a state agency through the use of the state's accounting system, procurement system, consulting with state officials and obtaining "state approvals" even when it did not need to do so."

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Pg. 10, para. 7

"We found that KTEC has the potential to be the kind of public private partnership that most states strive for. The board is subject to gubernatorial appointment, and there are strict procedures in use for monitoring both the use of funds and the performance of programs. It would seem that on paper, KTEC has sufficient mechanisms in place to allow for effective monitoring and control by the executive and legislative branches."

Pg. 13, para. 1

"The accountability systems in place (comprehensive tracing system, use of the state's procurement and budget offices, annual independent audits, extensive use of peer review, and an independent board of directors) are among the most advanced in the country."

There was also a perception that KTEC had strayed from its mission. This is unfortunate because we never have been able to identify an activity that was outside of KTEC's Enabling Legislation. The evaluators were unable to identify any examples. The following are comments taken from the study:

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"KTEC's authorizing legislation permits and requires a broad range of activities. Current programs, as constituted, are well within this legislative mandate..."

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"...we found the agency to have undertaken a wide range of programs consistent with both the 1986 Economic Development game plan mandated by the Legislature and its mission and goals."

Individuals not familiar with KTEC not only felt that we were operating in areas outside our legislation but also felt that we were not cooperating with other state agencies. Every effort has been made to direct Kansas businesses to the appropriate assistance, including: KDOC, SBDC's, other businesses, etc. KTEC understands that in many cases technology alone will not help a company. Many firms have needs outside of technology such as marketing, management or finance. Whenever this is the case, we make every effort to refer them to the appropriate assistance.

The Kansas Technology Enterprise Corporation understands its role in the Kansas economy. Moreover, we have and will continue to cooperate with other state economic development agencies because this is a "team" effort. KTEC has evolved to that point of maturity whereby it can now contribute significantly to the state's efforts in economic development. This will happen as others become familiar with KTEC and understand the resource that we represent.

If you wish to discuss the report in more detail, please contact me.

Sincerely,

William G. Brundage, Ph.D.
President

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PRESENTATION TO

THE

SENATE ECONOMIC DEVELOPMENT COMMITTEE

JANUARY 24, 1992

Presentation by:

William G. Brundage, Ph.D.
President of
Kansas Technology Enterprise Corporation

Attachment 2
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Sen. Eco. Dev.

Kansas Technology Enterprise Corporation

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Pg. 13, para. 1

"The accountability systems in place (comprehensive tracing system, use of the state's procurement and budget offices, annual independent audits, extensive use of peer review, and an independent board of directors) are among the most advanced in the country."

There was also a perception that KTEC had strayed from its mission. This is unfortunate because we never have been able to identify an activity that was outside of KTEC's Enabling Legislation. The evaluators were unable to identify any examples. The following are comments taken from the study:

Pg. 13, para. 4

"KTEC's authorizing legislation permits and requires a broad range of activities. Current programs, as constituted, are well within this legislative mandate..."

Pg. 6, para. 5

"...we found the agency to have undertaken a wide range of programs consistent with both the 1986 Economic Development game plan mandated by the Legislature and its mission and goals."

Individuals not familiar with KTEC not only felt that we were operating in areas outside our legislation but also felt that we were not cooperating with other state agencies. Every effort has been made to direct Kansas businesses to the appropriate assistance, including: KDOC, SBDC's, other businesses, etc. KTEC understands that in many cases technology alone will not help a company. Many firms have needs outside of technology such as marketing, management or finance. Whenever this is the case, we make every effort to refer them to the appropriate assistance.

The Kansas Technology Enterprise Corporation understands its role in the Kansas economy. Moreover, we have and will continue to cooperate with other state economic development agencies because this is a "team" effort. KTEC has evolved to that point of maturity whereby it can now contribute significantly to the state's efforts in economic development. This will happen as others become familiar with KTEC and understand the resource that we represent.

If you wish to discuss the report in more detail, please contact me.

Sincerely,

William G. Brundage, Ph.D.
President

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II. 1992 Activities

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KTEC's 1992 Activities

Return on Public Investment

The Institute for Public Policy and Business Research at the University of Kansas is developing a Return on Public Investment (ROPI) model so that KTEC can evaluate the economic impact of its programs. The ROPI steering committee includes: Sen. Dave Kerr; Sen. Janis Lee; Rep. Bob Mead; Rep. Dave Heinemann; Rep. George Dean; Rep. Diane Gjerstad; Bud Grant, KCCI; John Moore, Cessna; Jack Pierson, Preco; and Jarvin Emerson, KSU.

Third Party Review of Position Descriptions

KTEC has contracted with Ernst & Young to evaluate staff positions, and review office procedures. KTEC's staff of eight is committed to the best possible management of Kansas' investment.

Strategic Planning

By June 30, KTEC will complete its strategic plan.

Public Information

In an effort to increase the public's knowledge of KTEC, we have contracted with an individual to serve as KTEC's Public Information Director.

Telecommunications

State-of-the-art telecommunications in Kansas has been promoted by KTEC for several years. This special project began as a consortium of providers and users who worked together to design and establish a network easily accessible by business, education, the medical community and government. The project management committee includes: Andy Scharf, Division of Information Systems and Communications (DISC); Russ Phelps, Southwestern Bell Telephone; Barbara Paschke, Kansas Board of Regents; and David Brevitz, Kansas Consolidated Professional Services.

Commercialization

KTEC is embarking on a more formal and disciplined process of commercializing technologies. Executives on loan from industry will provide expertise in financing, management and marketing of new technologies and assist the vice president of commercialization to this end.

Industrial Agriculture

KTEC has earmarked $100,000 to promote industrial agriculture in 1992. This investment will allow Kansas to pursue industrial opportunities, create a capacity for fund management of public/private portfolios, begin the process of becoming a Regional Center, and ultimately enhance Kansas' opportunity to benefit from federal allocations for such efforts. KTEC is working on this project with the Board of Agriculture, the New Uses Council, and the Kansas Value-Added Center.

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Centers

The Centers of Excellence are beginning the process of implementing a structure that will allow them to further leverage KTEC funding, involve more research faculty and work with a greater number of Kansas businesses. They intend to become more involved in giving direction to Kansas' economic development initiative.

1/23/92, JR

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III. Fact Sheet

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KANSAS TECHNOLOGY ENTERPRISE CORPORATION (KTEC)

112 West Sixth, Suite 400, Topeka, KS 66603; (913) 296-5272

MISSION:

To create and maintain employment by encouraging entrepreneurship, stimulating the commercialization of new technologies, and promoting the creation, growth and expansion of Kansas businesses.

HISTORY:

1983	Kansas Advanced Technology Commission (KATC) Established within the Department of Economic Development
1986	Kansas Technology Enterprise Corporation (KTEC) Created by the Kansas Legislature; established as a state-owned corporation
1987	KTEC became operational

WHY WAS KTEC CREATED?

The Kansas Legislature and the Executive Branch joined forces to create KTEC because the technological needs of Kansas businesses required a new and more appropriate way in which to make them more competitive on a global scale.

Specific reasons:

- To provide scientific and engineering leadership;
- To remove technological, institutional and economical barriers to business expansion;
- To blend the cultures of academia, the private sector and government;
- To better address the needs and potentials of the Kansas business community;
- To operate like a business with the capability to be responsive in a timely manner;
- To use technology to modernize and diversify the State's economy;
- To establish credibility with business and academia;
- To transcend political boundaries; and
- To address unique accountability and management requirements.

EFFECTIVE ADMINISTRATION AND LEADERSHIP:

KTEC is administered by eight staff members and a 16-member Board of Directors representing the private sector, government and academia. We have been effective because:

- enabling legislation allows KTEC to operate like a business, yet maintain all of the controls necessary when utilizing public funds.
- true leadership is provided by those experienced in science, academia and the business sector.
- KTEC's FY 1991 operations budget was held to approximately 10% of its overall budget.
- KTEC is performance-driven.
- KTEC is one of the most cost-effective government agencies in Kansas and among its counterparts in other states.
- This is documented by an in-depth evaluation executed by the National Association of State Development Agencies (NASDA), Washington, D.C. Their report stated that "KTEC offers one of the most comprehensive and sophisticated technology development programs in the country.

DYNAMIC PUBLIC/PRIVATE PARTNERSHIPS:

The complexity and cost (both in human capital and technology) of competing globally demand partnerships between government, academia and the private sector. These partnerships, through leveraging of resources, allow the state and the nation to be competitive.

Through these public/private partnerships KTEC has established an effective and unique network that capitalizes on scientists, engineers, financiers, accountants, marketers, and various academic and government agencies.

With limited resources, these partnerships are the most cost-effective manner in which to achieve this economic development goal.

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THOROUGH ACCOUNTABILITY:

In all probability, KTEC is more accountable for its activities than any other state agency.

For example, the following are required:

- 16-member board of directors.
- audits performed by the Division of Post Audit at their discretion.
- annual audit by private accounting firm.
- evaluation criteria for all KTEC programs.
- peer review by some of the nation's best managers of technology development programs.
- oversight by Kansas Inc.
- a business plan with an update completed through the Strategic Planning process.
- all funds processed through Division of Accounts and Reports.
- annual budget must be prepared as requested by the Division of Budget (performance indicators included).
- regular reports to the Legislative Economic Development Committees.

Other activities which demonstrate accountability:

- Strategic Planning - professional assistance provided by IBM and Dr. Warren McFarland of the Harvard Business School. KTEC's plan should be finished by July 1, 1992.
- Return on Public Investment (ROPI) - KTEC has contracted with the Institute for Public Policy and Business Research at the University of Kansas to complete a Return on Public Investment model. This will allow KTEC to evaluate the impact of its programs on the State's economy.
- Committees - Advisory committees comprised of experienced individuals from business and government, assist KTEC with reviewing and making recommendations concerning its grant and Center programs.
- Tracking System - KTEC has developed a computerized system that enables it to manage information pertaining to the Centers of Excellence and grant programs—including the capability to track a company's progress long after completion of a project.

INNOVATIVE INITIATIVES:

The Innovative Technology Enterprise Corporation (ITEC) grew out of a Special Project funded by KTEC. ITEC is serving the needs of inventors and entrepreneurs with a variety of fee-based services and seminars.

The Mid-America Manufacturing Technology Center (MAMTC) was created following KTEC's receipt of a $12.9 million, six-year grant from the National Institute of Standards and Technology. The Center will work closely with more than 2,600 small and mid-sized manufacturers in Kansas and the Kansas City metropolitan area.

POSITIVE RESULTS*:

Investments:

State of Kansas investment--$22.5 million;
Leveraged with $50 million in industry and federal funding;

Results:

$17.2 million in increased sales for Kansas companies;
49 company start-ups through KTEC assistance;
25 company expansions;
3,316 new jobs created;
100 new technologies developed at our Centers or through our grant programs;
61 patents.

**Through June 1991.*

IV. Clippings

1/24/92
2-12

Topeka Capital Journal

Gambling plans

—Scott Weaver/The Capital-Journal

The Kickapoo Indian Nation announced Wednesday the selection of Sodak Gaming Supplies of Rapid City, South Dakota, as manager of its planned gambling casino. At a news conference on the reservation west of Horton, Kickapoo Chairman Steve Cadue, right, and Sodak President Mike Wordeman, in sports jacket, watched Dave Harcourt, Sodak sales manager, unroll blueprints for the casino. The Kickapoos intend to build a casino south of Hiawatha. Story on Page 7-B.

Standards group moving to Kansas

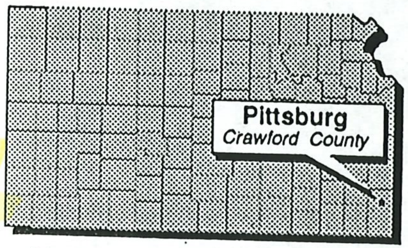
By BARBARA JOSEPH
The Capital-Journal

PITTSBURG — An international manufacturing standards organization will move the headquarters for one of its subcommittees to Pittsburg State University from Geneva, Switzerland, university officials announced Wednesday.

The decision will provide the university and the state new opportunities to develop national and international industrial contacts and help the country compete in the global marketplace, officials said.

At a Jan. 15 meeting in Carmel, Calif., the international subcommittee's board voted to move the headquarters, or secretariat, for the International Standards Organization's Engineering Dimensioning and Tolerancing Committee to this country, under the direction of the American National Standards Institute.

ANSI in turn chose the university's Center For Technology Transfer as the site for the secretariat, upon the recommendation of the United States.



The International Standards Organization, based in Geneva, has since its founding in 1946 designed and promoted international industrial manufacturing standards. Its members are national standards bodies from 86 countries, including the U.S. body, ANSI, headquartered in New York City.

The Center For Technology Transfer, one of the Kansas Technology Enterprise Corp.'s five university economic development centers, helps Kansas plastics and printing industries apply the latest technology to their products.

The subcommittee's secretariat had been headquartered in Geneva since 1976, but the Swiss government decided to permit its move.

With the decision, Pittsburg State becomes the second university in the world to be host to an ISO secretariat. Rutgers University is the international secretariat for ceramic tile standards. Hosts for other ISO secretariats are governmental bodies, private organizations and industry.

As secretariat, the Center for Technology Transfer will ensure certain equipment is made to standard sizes and fits. It would ensure, for example, that tires are the same sizes worldwide and that their nuts and bolts are interchangeable.

Dr. Robert Ratzlaff, university vice president for academic affairs, said in a prepared statement the secretariat would help train Kansas industry in national and international standards. He said it also would provide the university and the state with industrial contacts.

Dr. Victor Sullivan, dean of the university's School of Technology and Applied Science, said having input into industrial standards would provide this country greater entry into international markets. And he said following ISO standards is crucial.

"My guess is there aren't more than five or six companies in Kansas that know what the ISO is," he said. "They need to get cracking because they won't be able to sell their manufactured products outside the U.S. and Canada unless they're manufactured under ISO standards."

Sullivan said being host to the secretariat would cost about $40,000 annually. He expects that to be financed totally by private industry. He said $20,000 already has been pledged.

Robert Nickolaisen, a professor in the university's Department of Engineering Technology and a member of the ANSI Dimensioning and Tolerancing Committee, first suggested the university as a potential site for the secretariat, officials said.

Offices for the secretariat will be in the university's Shirk Hall. The secretariat will name the subcommittee chairman, organize international groups to revise and update standards manuals, maintain records and act as liaison to national standards bodies in other countries.

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Enrollment drops at three state universities

The Associated Press

Spring enrollment was down at the University of Kansas ...

sources are so limited," he said.

Spring enrollment at the Lawrence campus, off-campus centers in ...

centers increased by 41 students.

The enrollment for Jan. 15, the first day of classes, was down 3,585 ...

"Our students, faculty and staff have shown remarkable patience in dealing ...

Farm Journal, Sept. 1991

A combine with a twist

Spinning concave design may reduce machine size 30%

By LARRY REICHENBERGER

■ Rotary combines will get a new twist if Mark Underwood's dream comes true. The Burr Oak, Kan., farmer and his cousin Ralph Lagergren have designed a new rotary threshing system that features concaves which turn along with the rotor. Early indications are the design improves threshing efficiency—a trait the partners believe could downsize future combines by 30% or more.

The key feature of this "Bi-Rotor" design is a threshing cage with holes throughout. This cage turns in the same direction as the threshing rotor that spins inside it, though at a slower speed.

"The holes in our threshing cage are smaller than those in conventional concaves and separating grates, so less trash gets through," says Underwood. "However, because the holes cover the full 360 degrees, rather than the standard 120 degrees, and because the cage is turning, the grain gets through and threshing efficiency is improved."

Underwood explains that this improved efficiency allows the threshing and separating area of the Bi-Rotor design to be shorter—4′ or less compared with 8′ or 9′ in current rotary machines. "If combines were built using our rotor, they could be built smaller."

PHOTO BY THE AUTHOR

AFTER THEY DEVELOPED a new threshing mechanism for rotary combines, Mark Underwood, left, and Ralph Lagergren painted their prototype white and asked Jewell, Kan., farmer/artist Jim Nelson to add murals. "We want farmers to know it's different," says Lagergren.

The partners have pursued their idea for more than a decade. Recently, they raised over $200,000 from private investors and K-Tech, a Kansas agency that helps fund new business ventures, to finance development. The concept was tested with engineers at Kansas State University last year, and field tests continue this year with the unit installed in a Case IH 1480 combine.

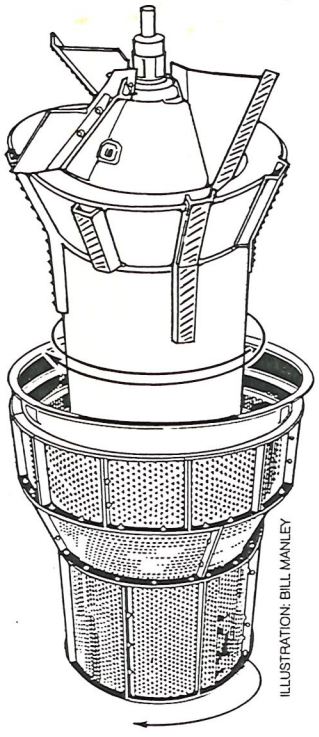

ILLUSTRATION: BILL MANLEY

THE "BI-ROTOR" UNIT features a rotor that whirls at approximately 800 rpm while a surrounding threshing cage turns at 50 rpm. The unit takes up roughly half the space of a conventional rotary threshing mechanism.

"Early indications are promising," says Kansas State's Stan Clark. "The harvesting capacity, grain loss and grain quality of the Bi-Rotor appear to be comparable to a standard machine of similar size. That's intriguing because this is only the first prototype. With fine-tuning, future models could perhaps be improved."

Part of the credit belongs to a uniquely designed rotor. It features rasp bars on the intake fins and is less than half the length of comparable threshing rotors. "The shorter rotor results in less ground-up straw reaching the chaffer, so cleaning capacity is increased," says Lagergren.

"We also keep material off the chaffer with chaff-relief chambers installed in the threshing area. These openings in the side of the combine vent about 15% of the chaff, but we think with some redesign we could take 30% or more of the chaff out before it reaches the chaffer." ◀

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KANSAS
Manhattan Mercury

OCT 8 1991

AP Laserphoto

KU Prof. Kai Wai Wong, left, discusses patent with KU's Robert Zerwekh and John Carlin.

Patent issued on superconductor

Associated Press

LAWRENCE—A University of Kansas researcher hopes a patent granted to Kansas and three other universities could revolutionize transportation, communication and consumer products within a decade.

Kansas officials announced receipt of the patent Monday for their work on superconductive material research.

It is for a vanadium-based superconducting oxide that can carry electrical currents without energy losses, at higher temperatures better than other superconductive materials.

Scientists have envisioned practical uses for the materials, including super-fast computers, inexpensive energy, medical advances and travel.

"All of our research to date clearly shows that vanadium is the best available superconductive material in terms of stability and its ability to be fabricated for practical use," said Kai-Wai "Ken" Wong, Kansas professor of physics and astronomy.

The patent is based on research done by Wong and professors at the universities of Missouri-Kansas City, Arkansas and Hong Kong.

Wong said the day when vanadium-based superconducting substances are used widely in commercial applications is far in the future.

However, development in the area has been rapid and it is possible the technology could be in use within a decade, he said.

The patent limits rights to the application of vanadium-based material but until it is used commercially, there will be no significant royalties, he said.

Wong and his colleagues are working with Midwest Superconductivity Inc., a private Lawrence company, to market the material.

"Competition is extremely intense in this arena," said former Kansas Gov. John Carlin, who is president of MSI.

The research has been financed by MSI, Kansas Technology Enterprise Corp., a state-financed economic development agency, and other sources.

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Press Clipping Division
Kansas Press Service, Inc.
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Box 1773, Topeka, Kansas 66601

NOV 6 1991
KANSAS
Emporia Gazette

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Video Network Tested in Rural Hospital

By Matt Truell
Associated Press Writer

TOPEKA — A lawmaker visualizes the day when rural Kansas doctors and their patients will talk to specialists in Kansas City, Kan., and Wichita over a two-way television.

Sen. Roy Ehrlich, R-Hoisington, chairman of the Committee for Health Care Decisions for the 1990s, offered that picture on Tuesday after hearing a presentation from an official from the University of Kansas Medical Center.

William Mahler, director of the Med Center's information technology department, said an interactive video network across the state hooked into the Med Center could improve the quality of health care in rural areas. A two-way video between the center in Kansas City, Kan., and the Hays Medical Center has been installed as a pilot project.

The interactive video allows medical specialists from the Med Center and KU's School of Medicine in Wichita to talk both to doctors and patients at Hays.

"This tool may not only enhance quality health care in rural Kansas, but may also bridge the distance barriers and provide support otherwise not available to the primary physician," Mahler told the Committee for Health Care Decisions for the 1990s.

The Hays Medical Center is involved in a pilot project for what could become an extensive video network extending to medically under-served rural areas.

"It's unbelievable," Ehrlich said. "This is something that could be utilized very, very much by one doctor, two doctors, with the knowledge of the University of Kansas."

The Hays Medical Center now has a portable studio that will allow specialists to interview patients there.

Ehrlich said he can envision the day when every doctor's office in rural Kansas would have such a video system.

The cost of the pilot project is $390,000. The money is being provided by the Meade Johnson Pharmaceutical Co., the Kansas Technology Enterprise Corp., the KU Med Center and the School of Medicine in Wichita, which is a branch of the KU Med Center.

Mahler said during the first year of operation, physicians will study the extent to which the system is used and will develop recommendations on how it could be deployed.

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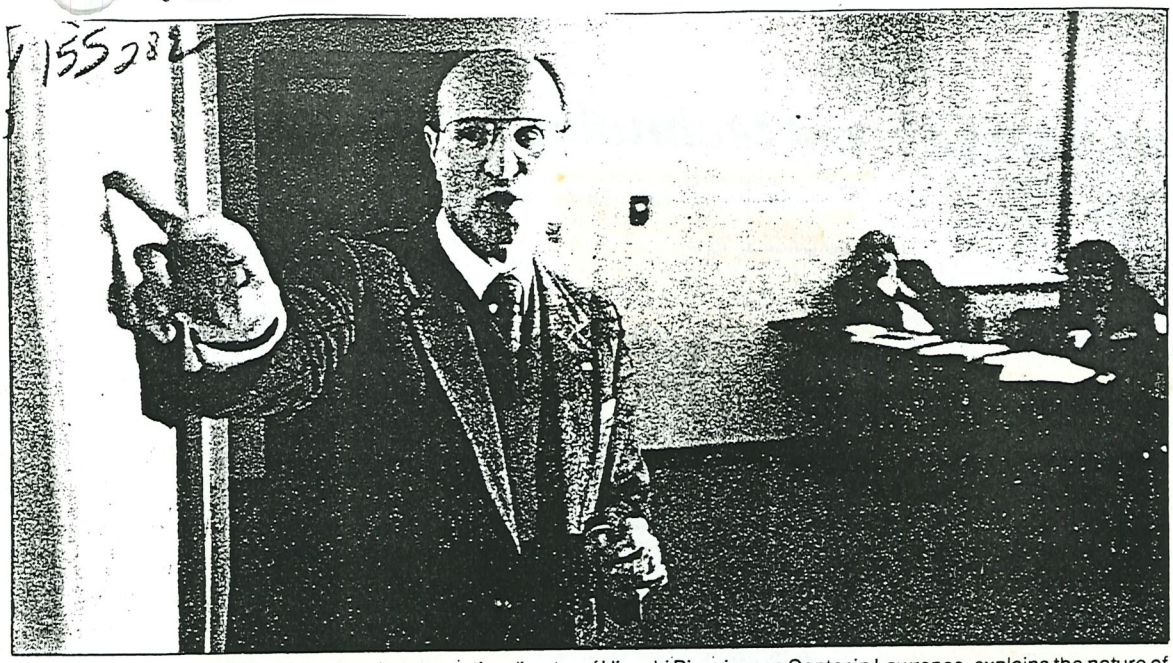
KANSAS
Bend Tribune
5 1991



LOTTERY FUNDS — Dr. Charles Decedue, executive director of Higuchi Biosciences Center in Lawrence, explains the nature of his business with the aid of an overhead projector this morning at Barton County Community College. Rep. Bob Mead, R-Pawnee Rock, invited officials from the University of Kansas and HBC to BCCC to explain how money from the Kansas Lottery is actually being used. — (photo by Marcus W. Stratton)

All this for a buck

Program shows how lottery finances research

By SUSAN THACKER
Tribune Staff Writer

When a Barton County resident spends $1 on a Kansas Lottery ticket, he probably isn't thinking about biochemical research or creating jobs for scientists. But there's a direct correlation between the two, Rep. Bob Mead R-Pawnee Rock, said today.

To illustrate the point, Mead invited representatives from the University of Kansas and the Higuchi Biosciences Center at KU to visit Barton County Community College today.

The Lawrence-based HBC relies on research financed in part by Centers for Excellence at the state's universities. With lottery funding, the Kansas Technology Enterprise Corporation finances the five centers, including KU.

Dr. Susan Lunte, assistant director of the HBC Center for Bioanalytical Research, said KTEC's financial support helps ideas develop from an idea to a marketable product. HBC works with national and international markets, including Oread, which has grown to 100 employees — 75 percent of which are Kansas natives.

Dr. Charles Decedue, executive director of HBC, said it can take 10 years and $250 million to develop a single drug. HBC helps Kansas provide service to small businesses that are at the beginning of the process.

"Higuchi doesn't want to own the gold mine, but it does want to own the general store next to the gold mine," Decedue said.

Mead said he brought the HBC representatives to Great Bend to encourage area business people to look beyond agriculture and the oil industry.

"We can have it right here in Barton County. We have to broaden our vision. This exercise today is planting seeds: We can do it, but we have to believe that we can do it. We have to know that we can do it."

— Rep. Bob Mead on economic development

"The hope that I have is that we use their research to benefit all of Kansas," Mead said. The speakers agreed that economic development funding can create high-tech jobs, good salaries and some new businesses.

"We can have it right here in Barton County," Mead said. "We have to broaden our vision. This exercise today is planting seeds: We can do it, but we have to believe that we can do it. We have to know that we can do it."

Other scheduled speakers were Dr. Diane O. Thompson, assistant director of the HBC Center for Drug Delivery Research, and Dr. Julian C. Holtzman, director of the Center for Excellence in Computer Aided Systems Engineering. Discussions were scheduled this afternoon so Barton County business people and other community representatives could identify needs which possibly could be solved through KTEC, the Centers for Excellence or other organizations.

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Kansas Press Sc...
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KANSAS
Manhattan Mercury
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Small firms may benefit from technology center

Beginning this fall, small and mid-size Kansas companies can be just a phone call away from changing their manufacturing techniques.

By contacting the Mid American Manufacturing Technology Center or one of the six affiliated technology transfer offices, a company can request engineering help with problems, simple or complex.

Farhad Azadivar directs the Advanced Manufacturing Institute at Kansas State University, one of the six regional sites. He talked about the multi-million dollar federal-state effort to transfer the newest manufacturing techniques to Kansas companies.

Azadivar explained that technological and engineering advances often have been made at the large, national laboratories and research universities. But that new knowledge has not been made available systematically to small companies. To break the log-jam and bolster the competitive ability of the 300,000 U.S. small companies, a national system of manufacturing technology centers was started in 1988 by the U.S. Department of Commerce. The Omnibus Trade Bill of 1988 set up three centers, and in 1991 two more centers were designated, including MAMTC.

The National Institute of Standards and Technology awarded $12.9 million to fund the MAMTC proposal prepared by Kansas Technology Enterprise Corporation and its partners: Advanced Manufacturing Institute at Kansas State University; Center for Productivity Enhancement at Wichita State University; Center for Technology Transfer; Garden City Community College; Tech-Industry Consultants at Johnson County Community College; and Western Kansas Technology Corporation at Great Bend.

Under the proposal, MAMTC will serve the 2,600 small to mid-size Kansas companies that make aircraft and motor vehicle parts, fabricated metals, farm and industrial machinery, plastics, tool and die, wood kitchen cabinets and other products.

"Many small companies employ no engineers," he said: "So when it comes to solving even relatively simple engineering problems they have been handicapped. A complex problem like designing a machine part or developing a new product poses a serious hurdle for them," he said.

The Advanced Manufacturing Institute has provided technical assistance to companies for several years, a role the NIST grant will strengthen, Azadivar noted. Two additional engineers will be hired to work with businesses. "Several products developed collaboratively between KSU engineers and various Kansas companies are close to production stage," he said.

"We also hope to stimulate the interest in computer-aided manufacturing technologies among Kansas manufacturers so they will become more competitive," he said. "Economic development for Kansas and creating new jobs in the state is the goal of the entire effort," Azadivar said.

During the coming year the Advanced Manufacturing Institute will be designing a "Factory on Wheels" - a large truck outfitted with computer numerical control machines and computers programmed to operate them. This demonstration unit for computer-aided design and manufacturing and numerical machining will travel the state so people can get hands-on experience with the newest technologies, Azadivar explained.

AMI also will test a new two-way interactive video teleconferencing system. With a device called a CODEC, which transmits voice and pictures via phone lines, engineers at Manhattan will be able to communicate long-distance with a company and actually look at a part or machine that is causing the problem.

MAMTC also will strengthen the extensive program of technical seminars and conferences offered by AMI.

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Staff photo by Rod Mikinski

Greg Spaulding shows his invention to State Rep. Sheila Hochhauser, Dennis Mullin and Roger Maughmer this morning. The device counts pills and drops them in bottles.

Device to ease pharmacists' headaches

Sherry Wright
Staff Writer

Engineer Greg Spaulding was building computer peripherals when his wife, Pam, a pharmacist, approached him one day and said, "Why don't you do something useful?"

Members of the Kansas Senate Ways and Means Committee and House Appropriations Committee watched the "something useful" in operation this morning.

The Spauldings have designed a robot—an automated prescription dispensing system (APDS) that is counting pills and dropping them into pill bottles in the Spauldings' garage.

The couple's dream, of course, is to manufacture a number of APDSes and install them, not in their garage, but in pharmacies across the country.

Spaulding's full-time job is with the Advanced Manufacturing Institute at Kansas State University. Dispensing Technologies Incorporated, the company formed to produce and market the APDS, is his second full-time job.

The Spauldings have some funding from Kansas Technology Enterprise Corporation and some from private investors. They need about another $250,000, Spaulding said, to manufacture and market the device "on a shoestring."

The state legislators visited the Spauldings this morning as part of their tour of state-funded facilities. While AMI and KTEC funds have helped with the initial stage, Manhattan Chamber of Commerce Economic Development Director Dale Stinson said he doesn't believe additional state funds will be forthcoming. Private and corporate supporters are needed now, Stinson said.

Mrs. Spaulding foresees big benefits for registered pharmacists like herself. Kansas, like many states, requires pharmacists to counsel patients about drug usage. But the number one complaint among her colleagues, she said, is that there's never time for counseling.

"My school was really big on counseling," Mrs. Spaulding said. "I don't want to stand back there and count all day. I think this will free us up to do much more."

She also believes the APDS will improve safety in her field. Computers, after all, count more accurately than humans. And no pharmacist, using this device, can pull the wrong bottle off the

See No. 3, back page

Device

(3) Continued from Page A1

shelf. Spaulding even plans to make an additional safety factor available — a system that will recognize the proper drug by its weight and will let the pharmacist know if the pills it selects are too light or heavy to be those required by the prescription.

The machine automatically selects the right drug from data that comes directly from the doctor's prescription slip. One thing it won't do, however, is read the doctor's handwriting. The pharmacist must still decipher that and type the data into the computer's memory.

And that, Mrs. Spaulding admitted, really can be tough. Professional pharmacy journals, she said, run "See if you can guess what this says" reproductions of prescription slips. "I never can figure them out," she said.

Despite that one limitation, Stinson believes the APDS is a good product. "But out in the world there are lots of good products," he said, "and funders have to make a choice.

"Dealing with new start-up companies is extremely exciting, but it's also extremely frustrating because you have to raise risk money."

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KANSAS
TECHNOLOGY
ENTERPRISE
CORPORATION

January 15, 1992

To: KTEC Board of Directors

From: Janie Rutherford, Director of Marketing Janie

Ralph Lagergren and Mark Underwood, the two cousins who created the bi-rotor combine project funded by KTEC, touted their innovation at the American Farm Bureau Federation's National Convention in Kansas City January 12-14. Their booth was among those in the Farmer Idea Exchange section.

On Monday, they were awarded the "best of show" for new and innovative ideas. The prize is the use of a brand new Ford-New Holland tractor for one year. In addition to receiving this award, two positive media coverage pieces may come out of this.

Ralph was successful in convincing a **Wall Street Journal** reporter to attend the show. I met the reporter, Gene Carlson, and he discussed his ideas for the story on Sunday. As he looked at it then, his story for the **WSJ** would slant toward "where do new and innovative ideas come from" and "where do they go for funding." Mr. Carlson was very interested in what Ralph and Mark had accomplished, and anticipated using them as one part of his story. Exactly how the story will run and when are unknown. He suggested that it would be a week to 10 days before we'd see it in the **WSJ**.

A second piece that may feature Ralph and Mark is probably a year from publication. A fellow by the name of Craig Canine from near DesMoines, Iowa, has an advance to complete a book about agriculture and innovation in the Midwest. He talked with Ralph and Mark, and was planning to drive to KSU to discuss the project with Dr.Stan Clark.

On Tuesday when Ralph called KTEC to give us an update and tell us about the award, he was on his way to meet with investors in Topeka and then going on to southwest Kansas to meet with some other investors before returning to Texas.

Here's Mark's address in Burr Oak, and Ralph's address in Texas if you'd like to drop the cousins a congratulatory note.

Mark Underwood
Rt. 1, Box 128
Burr Oak, KS 66936

Ralph Lagergren
3728 Whitefern
Ft. Worth, Tx 76137

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Attachment 3
1/24/92
Sen. Eco. Dev.