

Approved January 31, 1991
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. ~~XXX~~ on January 30, 1991 in room 123-S of the Capitol.

All members were present ~~XXXX~~

Committee staff present:

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

Conferees appearing before the committee:

Dr. Bill Brundage, President, Kansas Technology Enterprise Corporation

Senator Dave Kerr, Chairman, called the meeting to order. He noted that the Kansas Technology Enterprise Corporation (KTEC) is scheduled for elimination under the Governor's budget plan, with many of its duties and functions being transferred to the Department of Commerce along with a 43% reduction in funding.

Dr. Bill Brundage provided a written report (Attachment 1) to the Committee. KTEC was created by the 1986 Legislature and is an engineering, science and business oriented organization whose purpose is to establish partnerships between government and the private sector. He talked about KTEC's accountability and its programs. Dr. Brundage said the goal is to develop a solid infrastructure in the state for accessible and affordable research and development. He summarized the results of KTEC's activities and advised that 369 businesses representing 56 counties and 94 inventors representing 40 counties have received assistance.

Dr. Brundage told the Committee that, within the last 24 hours, KTEC has been advised that they are one of four finalists for a substantial grant. Twenty states applied for the grant from the National Institute of Standards and Technology which is to be used to assist manufacturing centers for small businesses (50 or fewer employees). Marianne Hudson, KTEC, provided further details. She said that the grant is \$12.9 million over the next six years and is targeted to help small manufacturers in modernizing their operations. There is no research involved; the money is used for training, consulting and updating existing equipment. She advised that there are 1800 such manufacturers in Kansas with an additional 800 in the Kansas City, Missouri area. KTEC is seeking financial support from Missouri for a cooperative effort for the businesses in the Kansas City area. KTEC would be required to come up with matching funds, but it was noted that not all of their funds would qualify. A site visit is scheduled for February 21 and 22, with a decision to be made in March.

Dr. Brundage said that written information about the grant would be prepared for distribution to Committee members. Senator Brady asked that the Committee be advised about the other three finalists, and particularly the organization of their programs. Senator Salisbury asked that the statement of purpose which was considered during the drafting of the legislation which provided for the establishment of KTEC be provided to the Committee. Senator Winter requested that KTEC prepare a summary of the programs that would be eliminated or reduced under the current budget proposal, including the number of positions which would be directly or indirectly eliminated.

Senator McClure moved that the minutes of the January 29, 1991 meeting be approved. Senator Brady seconded the motion, and the motion carried.

The meeting was adjourned at 9:00. The next meeting of the Committee will be Thursday, January 31.

Unless specifically noted, the individual remarks recorded herein have not been transcribed verbatim. Individual remarks as reported herein have not been submitted to the individuals appearing before the committee for editing or corrections.

PRESENTATION TO
THE SENATE ECONOMIC DEVELOPMENT COMMITTEE
JANUARY 30, 1991

Presentation by:

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

Attachment 1
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Sen. Eco. Dev.

KTEC

"The United States is becoming a bicoastal economy with the sixteen coastal states accounting for 42 percent of the nation's population and 70 percent of the real growth in wages and partnership income during the 1980's. Midwestern states (with the exception of the Minneapolis-St. Paul area and the forty-mile strip from Ann Arbor to Detroit) may be stuck in an "economic long wave" unless they can transform themselves into financial or high-tech centers."

Bell, D.
"The World and the United States in 2013"
Daedalus, 1987

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Kansas Technology Enterprise Corporation

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- IX. Success Stories

I. EXECUTIVE SUMMARY

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KANSAS TECHNOLOGY ENTERPRISE CORPORATION

EXECUTIVE SUMMARY

I. KTEC Organization

The Kansas Technology Enterprise Corporation (KTEC) is a state-owned nonprofit corporation governed by a 15-member Board of Directors. The board includes: the Governor, or at the discretion of the Governor, the Secretary of Commerce; four members of the legislature appointed by legislative leaders; and ten directors appointed by the Governor. Should the Secretary of Commerce be designated to represent the governor, that individual serves as an important, direct liaison to the governor's office. Of the ten members appointed by the Governor, six must represent the private sector and four must be scientists or engineers at institutions of higher education. Members serve staggered terms of four years. The board is very active in steering KTEC's programs, budget, expenditures, and staffing.

KTEC's President is selected and supervised by the board and is responsible for directing the corporation. The President has a staff of seven to manage KTEC's programs.

II. KTEC Funding Sources

The majority of KTEC's funds come from the Economic Development Initiatives Fund (EDIF). In FY 1991, KTEC was allocated \$5,815,904 in EDIF revenues. A very small portion of KTEC's budget, \$204,453 in FY 1991, was appropriated from the State General Fund. These latter funds support approximately one-third of KTEC's operational costs.

KTEC is directed to and has a successful history of leveraging state monies with financing from the private sector and federal government agencies. Since its inception, KTEC has provided \$15.1 million to universities and businesses in the state and has attracted \$35.5 million from other sources to Kansas.

III. Need for KTEC

KTEC was created to improve the health of Kansas' economy by fostering innovation in existing and developing businesses. When it created KTEC in 1987, the state recognized that without technological innovation (state-of-the-art technologies and competitive products), Kansas would experience a declining economy as a result of not having competitive products or manufacturing techniques.

As the world economy changes, manufacturers must become more efficient and sell new and/or enhanced products every few years in order to survive. This is especially difficult for small businesses, as they rarely can afford the full costs of research and development. Most businesses in Kansas are small to medium in size; consequently, it is essential that an infrastructure for research and development and state-of-the-art manufacturing and production capabilities be created.

KTEC has designed an infrastructure that will enable Kansas companies of all sizes to develop the products and techniques necessary to compete in the world marketplace. The infrastructure provides hands-on support for innovation by Kansas companies by linking them to: (1) university research, technical assistance and training programs; (2) financing for research and product

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development; (3) venture capital for business expansion; and (4) information on adaptation of new technology (e.g. federal programs, advanced telecommunications, and patent information). Ultimately the infrastructure will result in substantial and sustainable economic growth in Kansas.

IV. KTEC Programs

KTEC is building the infrastructure with a series of integrated financing and consultation programs. The three largest programs are:

KTEC Centers of Excellence - university-based research centers that provide research and development, product development, company networking programs, training, seminars and technical consulting for many client companies. Each center has a particular technical focus:

<u>Center Name</u>	<u>Technology Focus</u>
Advanced Manufacturing Institute (KSU)	manufacturing processes, advanced materials
Center of Excellence in Computer Aided Systems Engineering (KU)	computer analysis, software development
Center for Technology Transfer (PSU)	woods, plastics, printing
Higuchi Biosciences Center (KU)	pharmaceuticals, biotechnology
National Institute for Aviation Research (WSU)	aviation, engineering

Applied Research Matching Grants - provides partial financing of research to develop new or improved products for sale by Kansas companies. Many projects are conducted jointly by one company and one university.

KTEC Industrial Liaison Offices - technical experts provide consultation to small companies, including resolution of problems "on the factory floor." KTEC supports two outreach offices with locations in Great Bend/Garden City and Overland Park.

KTEC supports other important programs including: advising inventors on how to protect and market their inventions; providing research and training equipment at academic institutions for use by industry; developing a seed capital program; assisting small businesses in obtaining federal research contracts; and creating a consortium that will develop and coordinate an advanced telecommunications system for use throughout Kansas by businesses, schools, hospitals, universities, community groups, and government.

Most of these programs are directed locally, by industry, academic institutions, and economic development groups. KTEC manages its investments by communicating with and monitoring the local efforts. KTEC's staff and board of directors employ a number of management tools including a computerized project tracking system, comprehensive evaluations, and strategic planning.

KTEC's administrative costs are exceptionally low. During Fiscal Year 1991, the agency retained only eight (8) staff members and administrative costs represent 10.7% of its budget. Yet, thorough, professional administration of programs is still possible because of active participation by the Board of

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Directors, volunteers from the private sector and academia, and a management system designed to keep overhead at a minimum.

IV. Results

KTEC has had many successes in its three-year history and may be one of the most cost-effective programs of its kind. KTEC initiatives have:

- helped create 2,320 new jobs;
- assisted 347 Kansas companies and 93 inventors;
- more than doubled the state's investment -- \$15.1 million from KTEC has leveraged \$35.3 million from industry and the federal government;
- been important to the start-up of 26 companies and the expansion of 25; and;
- increased Kansas product sales by \$16.2 million.

These results have had an important impact on Kansas; however, the economic impact of KTEC will grow dramatically over the next several years. It is difficult to quantify all of the effects of the infrastructure now in place, the enhanced capacity of Kansas universities, the value of technologies already developed that are about to enter the marketplace, and the ultimate value of the new businesses that have been created. A few examples show the potential impact of KTEC investments:

- KTEC's support of the Higuchi Biosciences Center at KU is helping develop a pharmaceutical industry, when none existed before. Oread Laboratories, which markets technologies developed at the center, has grown from 2 employees in 1987 to more than 70 today. Other start-up companies are on the horizon, and several large firms from outside Kansas have expressed an interest in establishing a presence in Kansas in order to take advantage of this expertise.
- Several Kansas companies, including Dillon's grocery stores, now sell new Kansas wheat-based products that resulted from a KTEC project in which KSU researchers found a way to enhance the quality of hard white winter wheat. The improved wheat could help Kansas farmers make an extra 70 cents for each bushel used in the new bread, meaning a potential gain of \$28 million to the Kansas farm economy.
- A \$70,483 training equipment grant to Garden City Community College (GCCC) led to another \$300,000 from Festo Didactic Corporation and training for more than 100 employees. The training in hydraulic and pneumatic machines prepared employees for the meatpacking and aircraft industries. The project was so successful that John Deere chose GCCC for its Great Plains area training facility for mechanics and servicemen.
- KTEC recently submitted a proposal to a federal agency that could bring \$12 million to Kansas during the next six years. The effort would provide training and consultation to more than 1,800 small manufacturers in the state. The Centers of Excellence and Liaison Offices, as well as community colleges and economic development agencies, form a "Delivery System" that is the basis of the proposal. Kansas' proposal is considered one of the strongest competitors for the federal grant because of the KTEC infrastructure.

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II. WHY WAS KTEC CREATED?

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Why KTEC Was Created

I. History--

July 1983, KATC

July 1986, KTEC Legislation

January 1987, KTEC

II. To blend the cultures of academia, the private sector, and government;

To better represent the public;

To operate like a business;

To establish credibility with business and academia;

To address unique accountability and management requirements;

To address staffing requirements; and

To transcend political boundaries.

III. ACCOUNTABILITY

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KTEC Accountability

I. Required

Board of Directors

- Appointed by Governor and Confirmed by Legislature
- 4 Legislators appointed by Leadership of both parties
- Governor or designee

Annual Audit

Audit by Division of Post Audit

Evaluation Criteria

Peer Review

Oversight by Kansas, Inc.

Business Plan

All Funds Processed through Accounts and Reports

Annual Budget Proposal to Division of Budget (performance indicators included)

Close Communication with Legislative Economic Development Committees

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KTEC Accountability

II. Other

Strategic Planning

Return on Investment

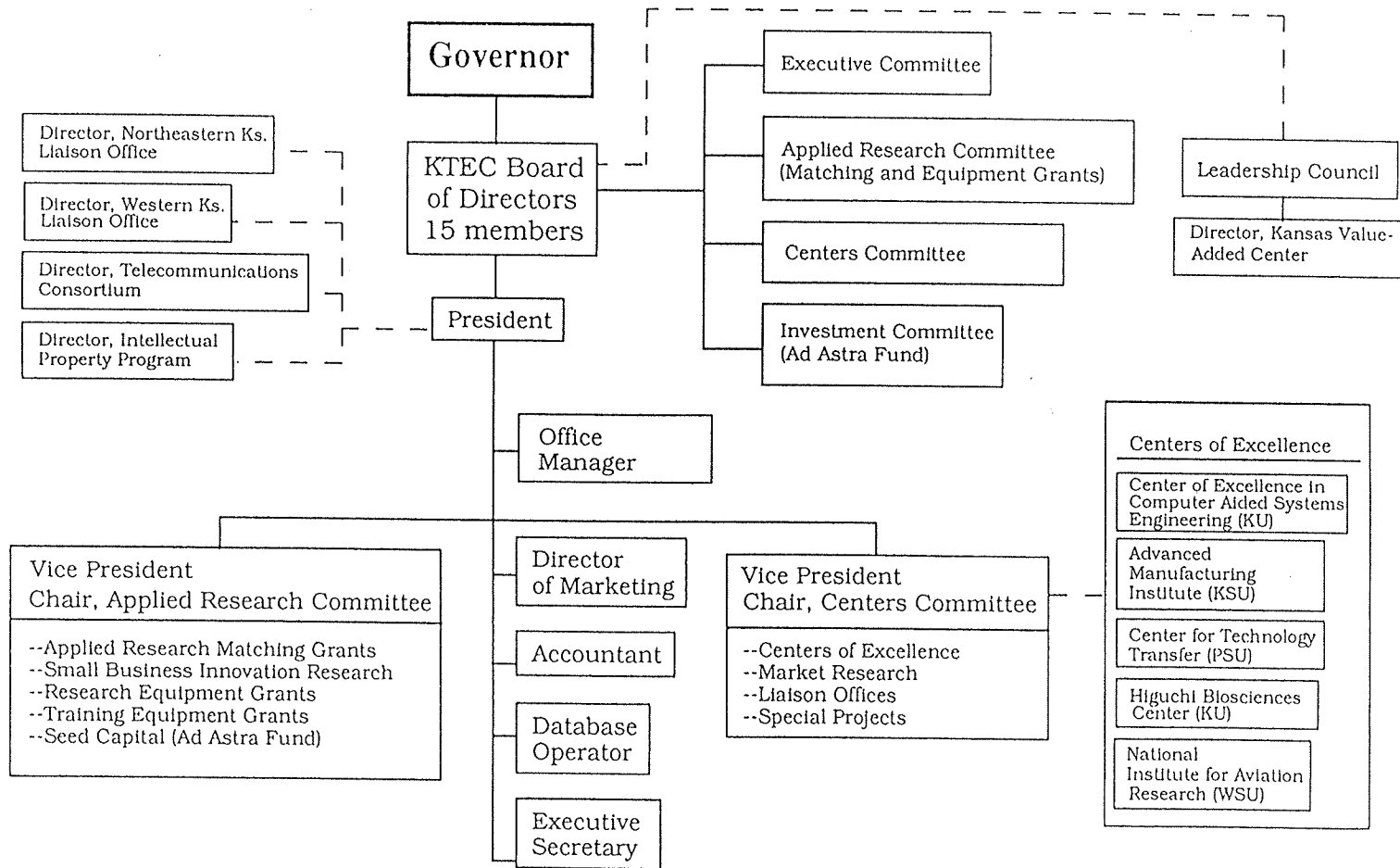
Committees

Tracking System

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IV. ORGANIZATION CHART

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KANSAS TECHNOLOGY ENTERPRISE CORPORATION

William G. Brundage
President

John E. Moore
Chairman

Private Sector

Richard Bendis
President
Network Health Services, Overland Park

John Davis
President
Fidelity State Bank, Garden City

John E. Moore
Senior Vice President
Cessna Aircraft, Wichita

Lois Schlickau
Past President
Kansas Board of Agriculture, Haven

Lloyd T. Silver, Jr.
President
LSC, Inc., Shawnee Mission

Carol Wiebe
Director of Economic Development
Hillsboro Development Corp., Hillsboro

Higher Education Representatives

Dr. John Breazeale
V. P. for Academic Affairs
Wichita State University

Dr. Theodore Kuwana
Regents Distinguished Professor
University of Kansas

Dr. Gale Simons
Associate Dean of Engineering
Kansas State University

Dr. F. Victor Sullivan
Dean, School of Technology
Pittsburg State University

Governor's Designee

Secretary of Commerce

Legislative Appointments

Representative George Dean
Representative Rochelle Chronister
Senator Norma Daniels
Senator Dave Kerr

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V. PROGRAMS

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KTEC PROGRAMS

Centers of Excellence
Applied Research Matching Grants
Research Equipment Grants
Training Equipment Grants
Small Business Innovation Research Grants
Seed Capital
Technical Database
Industrial Liaison
Special Projects

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VI. SUMMARY OF RESULTS

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KTEC SUMMARY REPORT

Accumulative investments, leveraged monies,
and results from KTEC initiatives.

All Programs, 1984 - June 1990

KTEC Investment: \$15.1 million

Leveraged with:

\$18.1 million in industry funding

\$9.9 million in federal funding

\$7.5 million in venture capital

Total: \$35.5 Million

Results:

26 company start-ups

25 company expansions

\$16.2 million in increased sales

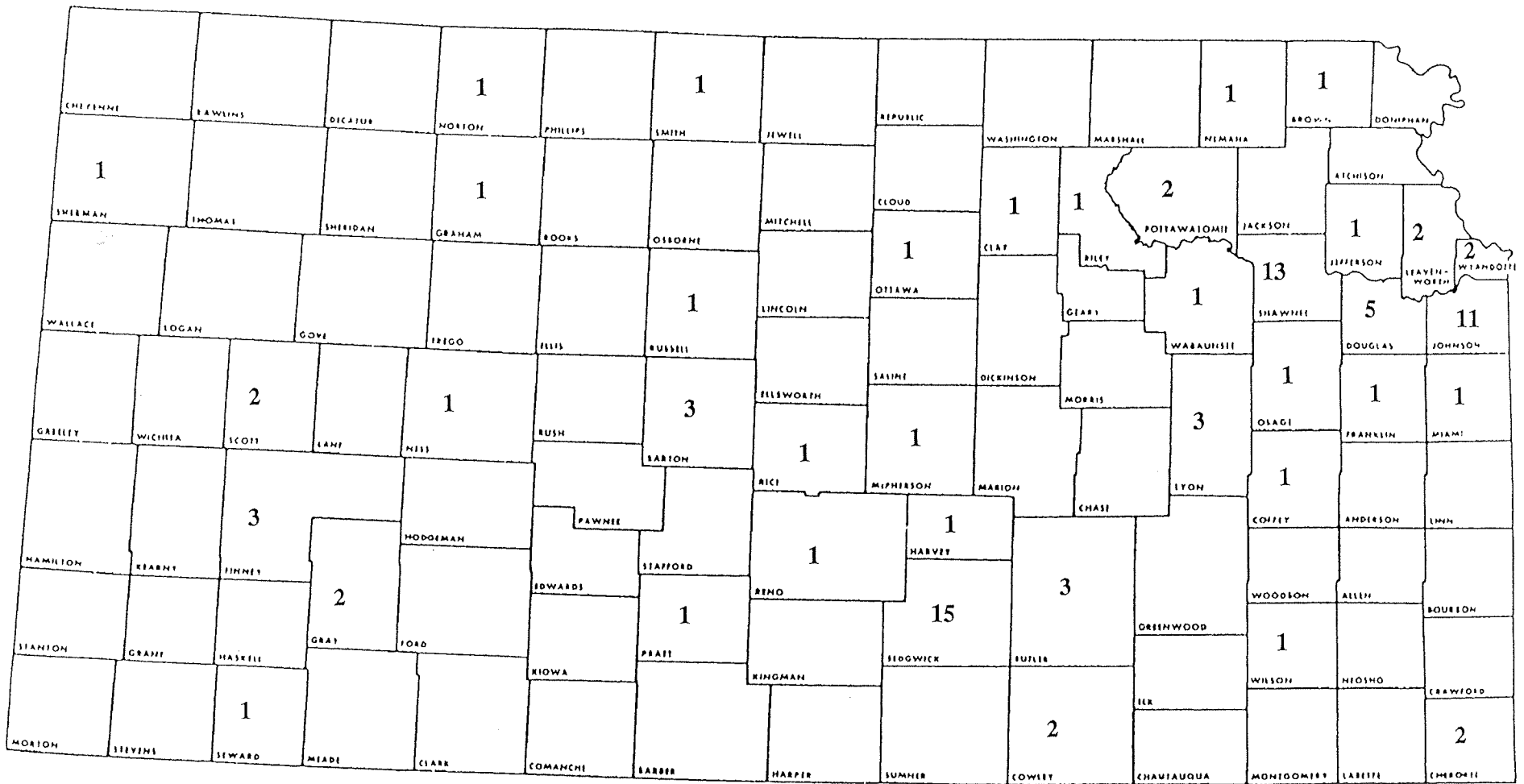
2,320 jobs created

74 new technologies

23 patents issued or pending

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KTEC Inventor Assistance Program Number of Inventors in 1990, by County



94 Inventors Assisted, Representing 40 Counties

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COMPANIES PARTICIPATING IN KTEC PROGRAMS

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<u>Company</u>	<u>Location</u>
A & B Machine, Inc.	Salina
Aarons Repair	Great Bend
Abitibi-Price	Hiawatha
Accumix, Inc.	Garden City
Ace Foundry	Kansas City
ACT, Inc.	Shawnee Mission
Acra-Plant, Inc.	Garden City
Advanced Video Technologies	Overland Park
AeroComm Machining	Wichita
Aero Machine Co., Inc.	Wichita
Aero Mach Labs	Wichita
Aero Technologies, Inc.	Wichita
Agri-Technology	Coffeyville
Alberston & Hein, Inc.	Wichita
Allco Chemical	Columbus
Amaranth Corporation	Oberlin
American Concrete	Pittsburg
American First Services, Inc.	Wichita
American Metal Fabrication	Wichita
American Plains Agri-Technologies	Colby
American Water Purification, Inc.	Wichita
American White Wheat Producers Assn.	Atchison
Ametek, Inc.	Wichita
Aptus Enviromental Services, Inc.	Coffeyville
Aquaculture Engineering, Inc.	Bonner Springs
Arnel Communications	Baxter Springs
Arpeda Corporation	Silver Lake
As-Cast Steel	Lawrence
Associated Co., Inc.	Wichita
ATI Filter	Ottawa
Automate	Chanute
Automated Aircraft Tooling	Wichita
Automotive Controls Corp.	Independence
Avmar Research Labs	Wichita
B & B Machine & Tooling, Inc.	Wichita
B & D Instruments	Valley Center
Balderson, Inc.	Wamego
Bates Marketing Services	Wichita
Beech Aircraft Corp.	Wichita
Bell & Carlson	Atwood
Bendix-King	Olathe
Biocore, Inc.	Topeka
Biomune Corp.	Lenexa
Blanchat Machine Company, Inc.	Wichita
Blaylock Diesel	Baxter Springs
Boeing Commercial Airplane Group	Wichita
Boeing Military Airplane Co.	Wichita
Bremson Data Systems	Lenexa
Brittain Machine, Inc.	Wichita
Brookover Companies	Garden City

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Brown Cargo Van, Inc.
Buck Rogers Company
Build With Us, Inc.
Builders Inc.
Steven Butler
Cabin Crafts Co.
CAC Tool Corporation
The CAD Room
Casco, Inc.
Catalytic Industrial Group
CCT, Inc.
Century Wood Products
Cessna Aircraft
Charloma Fiberglass
Chemsyn Service Labs
CIMLINC
CMP Computer Services
Coleman Company
Collins Ambulance Corp.
Comdisco Systems, Inc.
CompuSpeak Laboratories, Inc.
Computer Coupon
Computer Information Sciences
Cookbook Publications
Coons Manufacturing Co.
Cox Machine, Inc.
Crust Buster/Speed King, Inc.
Culligan Water
Custom Truck Beds
Cypress Systems
D-J Engineering
Data Security Systems
Data Technique
Delta Management Systems, Inc.
DewEze Manufacturing
Diagnostic Concepts International
Dice Video
Dispensing Technologies, Inc.
Dillon's Bakery
Dina Corporation
DME Electronics
Doeers Metal Products
D.O.M. Associates
Dorskocil Foods
DPRA Inc.
DP-Tek Inc.
Dubberr Industries
Dupont Enterprises
E & F Mfg.
Earth Resource Data Corp.
Easton Manufacturing
Eaton Corporation
Eck & Eck Machine Co., Inc.
Elec-Tron, Inc.
Electronic Sensors

Lawrence
Olathe
Columbus
Wichita
Humboldt
Garden City
Wichita
Wichita
Wichita
Independence
Olathe
Kansas City
Wichita
Cherryvale
Lenexa
Wichita
Wichita
Wichita
Hutchinson
Lawrence
Overland Park
Wichita
Manhattan
Larned
Oswego
Wichita
Dodge City/Spearville
Topeka
Humboldt
Lawrence
Augusta
Overland Park
Pittsburg
Mission
Harper
Overland Park
Neodesha
Manhattan
Hutchinson
Pittsburg
Wichita
Larned
Manhattan
Hutchinson
Manhattan
Wichita
Olathe
Kansas City
Wichita
Lenexa
Wichita
Hutchinson
Wichita
Wichita
Wichita

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Energy Reduction Systems
Engineered Machine & Tool
Engineering Specialty
Eos Technologies
Exacta Machine, Inc.
Excel Corporation
Excel Manufacturing, Inc.
Exercise Bingo
Exline, Inc.
Ferrell Salvage
Fiberite
The Finishing Touch
First Line, Inc.
Fitzgerald Essential Oils
Flexweight
FMC Corporation
Fuel, Inc.
Full Vision, Inc.
Funk Division/ Cooper Industries
Galaxy Audio
Garden City Inv.
GENA
General Electric Aircraft Maintenance
George Morris Associates
Glendo
Global Trade Opportunities
Globe Engineering Co., Inc.
Goodyear Tire & Rubber Co.
Gordon-Piatt Energy
Great Bend Manufacturing Co., Inc.
Great Plains Industries, Inc.
Hallum Tooling
Hancock Electric
Hanlon Chemical
Hanks Machining Company
Harlow Aircraft Mfg.
Hay & Forage Industries
Hayes Tooling, Inc.
Healey Associates, Inc.
Health and Environment, Inc.
Heatron, Inc.
Helios Power Co.
Heritage Door Co.
Hesston Industries
High Plains Quality Foods
Hillsboro Industries
Hill's Pet Products
HiLine Plastics
HI-LO Table Manufacturing
Hix Screen Printing
H. L. Miller and Son
Hose America
Hundley
Hybrids International, Ltd.
Hydro-Tech

Hutchinson
Wichita
Olathe
Leavenworth
Wichita
Dodge City
Lenexa
Osage City
Salina
Mulberry
Wichita
Pittsburg
Lawrence
Oswego
Great Bend
Lawrence
Hugoton
Newton
Coffeyville
Wichita
Garden City
Topeka
Arkansas City
Eskridge
Emporia
Lawrence
Wichita
Topeka
Winfield
Great Bend
Wichita
Wichita
Lyons
Kansas City
Wichita
Wichita
Hesston
Olathe
Prairie Village
Manhattan
Leavenworth
Pittsburg
Wichita
Hesston
Ulysses
Hillsboro
Topeka
Olathe
Chanute
Pittsburg
Iola
Iola
Garden City
Olathe
Chanute

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Hypercard Workshop
IBP Inc.
IPRX
ICADA
ICE Corporation
IMP Boats
Industrial Millwork
IPRSS Consulting Group
Innovative Foods, Inc.
Integrated Support
Interactive Concepts Incorporated
Interface Consultants
InterX
Jantz-Femco
Jayhawk Plastics
J.D., Inc.
Jet-Teck, Inc.
J & W Industries
K & K Sprigger
Kanamak Hydraulics
K.C. Design
KC Pharmacol
KMG Tool & Machine Co.
Kansas Electric Utilities Research
Kansas Microtech, Inc.
Kansas Minerals
Kansas Wheat Commission
K-VET Inc.
Kantronics Inc.
Keystone Software
Kice Industries
Klein Tools, Inc.
KOAM TV
Kohlman Systems Research
Kopco
Kraft TeleRobotics, Inc.
Kramer Seed Farms
Kreonite Inc.
Krueger
L & S Machine Co., Inc.
L & W Engineering Company, Inc.
Labconco Corporation
Lagerquist
Lamar Electro-Air
Landoll Corp.
Lawrence Electronics & Computing
Layne Geosciences
Leading Edge LECS
Learjet Corporation
Lee Air Inc.
Leonard's Metal, Inc.
Livingston Graphics
Loving & Loving
Magic Focus, Inc.
Martin-Logan, Ltd.

Pittsburg
Garden City
Lawrence
Manhattan
Manhattan
Chanute
Seneca
Kansas City
Colby
Lenexa
Lawrence
Pittsburg
Lawrence
Moundridge
Olathe
Lyons
Olathe
Oswego
Coffeyville
Garden City
Overland Park
Lenexa
Wichita
Topeka
Chanute
Mankato
Manhattan
Washington
Lawrence
Olathe
Wichita
Moran
Pittsburg
Lawrence
Caney
Overland Park
Hugoton
Wichita
Olathe
Wichita
Wichita
Fort Scott
Shawnee Mission
Wellington
Marysville
Lawrence
Kansas City
Lawrence
Wichita
Wichita
Wichita
Girard
Great Bend
Augusta
Lawrence

Master Machine Tools
Matthews Machine Works
McGinty Machine Company, Inc.
McPherson Manufacturing, Inc.
MedVantage, Inc.
Mega Manufacturing
Metal Fab
MicroLite
Mid-America Elect
Mid-America Plastics
Mid-Central Manufacturing, Inc.
MidSports
Mid-States Metal Lines
Midway Products
Mires Machine Co., Inc.
Mitchell Clark Co.
Mobay Corporation
Mobile Care, Inc.
Mold Flow
Monarch Cabinets, Inc.
Monarch Cement, Inc.
Monfort-Beef Division
Mound City Products
Mykro-Tek
NAAB Electric, Inc.
Nance Manufacturing, Inc.
National Mills
Nationwide Printing
N.C. Machine
NCR Corporation
Nibarger Tool Services, Inc.
Numbers Are Fun
Numerical Control Support
NU-Way Industries, Inc.
Odin Corp.
Odontek
Olathe Manufacturing
On-Track Corp.
Oread Laboratories
Osage Metals
Osborne Industries
O-Tec
Ottawa Truck Corp.
Paper Graphics
PAR Marketing
Parker Hannifin Corporation
Parmac
Parsons Vet-tank
Pawnee Industries
Pawnee Plastics
PC Boards, Inc.
Peerless Products
Peterson, Inc.
Plainsmen Manufacturing
Philips Lighting Co.

Hutchinson
Kansas City
Wichita
McPherson
Shawnee Mission
Hutchinson
Wichita
Chanute/Altoona
Olathe
Garnett
Wichita
Pittsburg
Stafford
Bendena
Wichita
Overland Park
Lenexa
Topeka
Pittsburg
Independence
Humboldt
Garden City
Mound City
Wichita
Garden City
Wichita
Pittsburg
Kansas City
Wichita
Wichita
Wichita
Stark City
Olathe
Chanute
Manhattan
Lawrence
Olathe
Overland Park
Lawrence
Kansas City
Osborne
Oberlin
Ottawa
Garden City
Wichita
Manhattan
Coffeyville
Parsons
Wichita
Wichita
Chanute
Kansas City
Overland Park
Plains
Salina

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Phoenix Group
Physio Technology, Inc.
Pitt Plastics
Plastic Fabricating
Plessey Aero Precision Corporation
Poli-Tron, Inc.
Precision Machining
Precision Pattern, Inc.
Precision Products
Precision Winding
PRECO Industries
Probe Adventures, Inc.
Professional Machine and Tool, Inc.
Professional Resources
ProGene Corp.
PSI, Inc.
Pure Water Corporation
Puritan Bennett Corporation
Pyramasol
Q Corporation
Quad Recovery Systems, Inc.
Quality Consultants
Rail Maintenance Company
RE Reeves, Inc.
Remote Computing Systems
Resources Recovery
Rhodes Loud Speakers
Ruf Corporation
Russell Enterprises
Safelite
Sailcraft
Schwarten
Sentinel Machine
Seymour, Inc.
Shawnee Press
Shearer, Inc.
Sherwood Cabinets
Shimadzu Kansas Research Lab.
Simpson Enterprises
Sigma-Tek
Simco-Norvell
Sizemore Machine, Inc.
Skytouch, Inc.
Solomon Electric Supply, Inc.
Sonic Technologies
Spectrum Economics, Inc.
SPM Group, Inc.
Space Works
Sprenkle
Stafford County Mills
Stearman Aircraft Products
Stephen E. Korpi & Associates
St. John Welding
St. Paul Cabinets
Stoutco, Inc.

Pittsburg
Topeka
Pittsburg
Wichita
Wellington
Pittsburg
Wellington
Wichita
Wichita
Wichita
Lenexa
Burr Oak
Wichita
Lenexa
Overland Park
Pittsburg
Kansas City
Lenexa
Arlington
Derby
Chetopa
Wichita
Topeka
Pittsburg
Olathe
Coffeyville
Arma
Olathe
Shawnee
Wichita
Chanute
Overland Park
Ellinwood
Topeka
Shawnee Mission
Wichita
Parsons
Lawrence
Topeka
Augusta
Cheney
Wichita
Salina
Solomon
Overland Park
Overland Park
Lawrence
Hutchinson
Overland Park
Hudson
Valley Center
Overland Park
St. John
St. Paul
Independence

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Strata Environmental
 Strauss Implement
 Sunflower Electric
 Sunny Development, Inc.
 Superior Industries
 Surfaces Research & Applications
 Suspended Optics
 Syntro Corporation
 Tandy Computers
 Target Advertising
 TCBC
 The Gold Standard, Inc.
 Thohoff Co.
 Three Way Pattern
 TMR Corporation
 Tramco, Inc.
 Triad Company
 Tri-Con Inc.
 Triple C Company
 Tru-Circle Manufacturing
 Tuffy Tools, Inc.
 Uniflo Conveyor
 Unitech Corporation
 United Machine Company, Inc.
 U.S. Awards
 U.S. Safety
 Vague Trading Company
 Vibrahum
 Vickers Electromech
 Waste As Feed
 Weaver Manufacturing, Inc.
 Wenger Manufacturing, Inc.
 Wescon Products
 Weymeyer
 Wichita General Corporation
 Wichita Machine Products, Inc.
 Wichita Tool Company, Inc.
 Wilkins, Inc.
 Winding Specialists
 WISEDA Corporation
 Wolfe Electric
 Wood Haven Products
 World Wood Recycling, Inc.
 Younger & Sons Mfg.

Wichita
 Strauss
 Hays
 Parsons
 Pittsburg
 Lenexa
 Topeka
 Lenexa
 Wichita
 Arma
 Salina
 Lenexa
 Iola
 Wichita
 Lenexa
 Wichita
 Salina
 Chanute
 Norton
 Wichita
 Quinter
 Wichita
 Wichita
 Wichita
 Wichita
 Lenexa
 Wichita
 Wichita
 Wichita
 Olathe
 Wichita
 Sabetha
 Wichita
 Pittsburg
 Wichita
 Wichita
 Wichita
 Osborne
 Wichita
 Baxter Springs/Oswego
 Wichita
 Perry
 Shawnee Mission
 Viola

KTEC is also working with 18 out-of-state companies interested in establishing an operation in Kansas. Most of these are in the start-up stage.

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VII. PERFORMANCE INDICATORS

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NARRATIVE INFORMATION—DA 400

DIVISION OF THE BUDGET

DEPARTMENT OF ADMINISTRATION, STATE OF KANSAS

AGENCY NAME Kansas Technol e:
 AGENCY—SUBAGENCY CODES 00
 PROGRAM TITLE AND CODE Agencyw
 SUBPROGRAM TITLE AND CODE

KTEC

PERFORMANCE INDICATORS:

CENTERS OF EXCELLENCE

	<u>FY 1990</u> <u>Actual</u>	<u>FY 1991</u> <u>Estimate</u>	<u>FY 1992</u> <u>Level A</u>	<u>FY 1992</u> <u>Level B</u>	<u>FY 1992</u> <u>Level C</u>
<u>High quality research programs</u>					
Number of participating businesses	275	350	375	375	430
Industry funds invested	\$1,262,869	\$1,923,000	\$2,200,000	\$2,200,000	\$4,000,000
Federal funding attracted	\$2,718,820	\$3,273,000	\$3,500,000	\$3,500,000	\$4,800,000
Number of center employees & researchers	104.5	140	140	140	190
Number of graduate students and visiting scientists	166	190	190	190	250
Number of papers published	240	290	290	290	380
<u>Commercialization and Industrial Use</u>					
New technologies developed	32	35	35	35	45
Patents filed and issued	10	10	10	10	40
Licenses awarded	0	0	1	1	5
Conferences, workshops and seminars held	42	50	50	50	60
Attendance at conferences, workshops, seminars	1,791	3,000	3,000	3,000	4,000
<u>Impact on Existing and New Businesses</u>					
Jobs created	106	170	200	200	250
Companies assisted and reporting benefit	275	350	375	375	430
Sales dollars created	\$1,428,000	\$2,000,000	\$2,500,000	\$2,500,000	\$3,000,000
Cost savings to companies	\$1,511,000	\$2,500,000	\$3,200,000	\$3,200,000	\$3,900,000
New companies formed	12	14	15	15	15
Companies relocated from outside state	2	2	3	3	4
Venture capital attracted	\$22,000	\$1,000,000	\$2,000,000	\$2,000,000	\$3,000,000

At Level C, the increases in the performance indicators for the Centers would be generated from the following activities:

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DEPARTMENT OF ADMINISTRATION, STATE OF KANSAS

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 SUBPROGRAM TITLE AND CODE

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Activity

Significance

Development of advanced materials for the aviation, electronics, and general manufacturing industries

Advanced materials is one of the top five areas of interest for industry and federal agencies

Expansion of crash laboratory and wind tunnels

Companies use labs to test their equipment to gain FAA certification; potential for spin-off companies

Expansion of woods and plastic research at CTT

35-40 percent of CTT's clients request help in plastics; opportunity to enhance national reputation in woods

Attract new biotechnology researchers to HBC

Necessary to maintain national leadership with biotechnology companies; increase venture capital to their holding company

Purchase computer equipment; begin industry affiliates program at CECASE

Computer equipment used by several companies; affiliates program effective economic development tool in other states

APPLIED RESEARCH MATCHING GRANTS

	<u>FY 1990</u> <u>Actual</u>	<u>FY 1991</u> <u>Estimate</u>	<u>FY 1992</u> <u>Level A</u>	<u>FY 1992</u> <u>Level B</u>	<u>FY 1992</u> <u>Level C</u>
<u>Assistance to Companies</u>					
Hands-on research/tech transfer	31	30	26	26	38
Existing companies assisted	25	21	17	17	26
New company start-ups	5	8	7	7	10
Relocations from out-of-state	1	1	2	2	2
<u>Innovative Projects</u>					
Patents Issued	5	6	5	5	7
New Technologies Prototyped	11	13	12	12	16
<u>Maximize Leverage</u>					
Industry match--projects	\$2,500,586	\$2,200,000	\$1,900,000	\$1,900,000	\$2,700,000
Venture capital attracted	\$835,000	\$2,500,000	\$4,000,000	\$4,000,000	\$4,000,000

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Increased jobs and sales *NOTE--Given a 3 to 5-year time lag between awarding grants and commercialization of new products, the jobs and sales increases tied to various budget levels will be realized accordingly.

	FY 1990 Actual	FY 1991 Estimate	FY 1992 Level A	FY 1992 Level B	FY 1992 Level C
New jobs	165	450	600	600	650
Increased sales	\$2,600,000	\$10,000,000	\$20,000,000	\$20,000,000	\$20,000,000
3 to 5-year new jobs			1,500	1,500	2,500
3 to 5-year new sales			\$60,000,000	\$60,000,000	\$100,000,000

University/Industry Collaboration
 Students on company proj.

	FY 1990	FY 1991	FY 1992	FY 1992	FY 1992
Students on company proj.	36	40	32	32	45

INDUSTRIAL LIAISON

	FY 1991 Estimate	FY 1992 Level A	FY 1992 Level B	FY 1992 Level C
Jobs Created	20	50	50	70
Sales Increases	\$500,000	\$1,500,000	\$1,500,000	\$1,800,000
Costs Saved	\$800,000	\$2,000,000	\$2,000,000	\$2,400,000
Companies Assisted	25	40	40	50
Companies Contacted	100	200	200	250
Match Dollars	\$150,000	\$300,000	\$300,000	\$500,000
ARMG & SBIR Applica- tions	6	8	8	13

RESEARCH EQUIPMENT GRANTS

	FY 1990 Actual	FY 1991 Estimate	FY 1992 Level A	FY 1992 Level B	FY 1992 Level C
Companies Assisted					
Hands on research/training	40	45	35	35	70
Other companies assisted	12	25	20	20	35

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KTEC

Maximize Leverage

Industry and Federal Match \$721,399 0 0 0 \$1,050,000

TRAINING EQUIPMENT GRANTS

	<u>FY 1990</u>	<u>FY 1991</u>	<u>FY 1992</u>	<u>FY 1992</u>	<u>FY 1992</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Level A</u>	<u>Level B</u>	<u>Level C</u>

Upgrade technical skills

Industry employee training	70	100	100	150	200
Student enrollees	80	125	150	200	250

Maximize leverage

Industry and Federal match 0 \$375,000 0 \$280,000 \$625,000

SMALL BUSINESS INNOVATION RESEARCH

	<u>FY 1990</u>	<u>FY 1991</u>	<u>FY 1992</u>	<u>FY 1992</u>	<u>FY 1992</u>
	<u>Actual</u>	<u>Estimate</u>	<u>Level A</u>	<u>Level B</u>	<u>Level C</u>

Proposal/award activity

Federal proposals assisted in	4	12	6	6	18
Federal proposals awarded	1	3	2	2	5
Dollars leveraged	\$441,471	\$450,000	\$225,000	\$225,000	\$675,000

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SEED CAPITAL PROGRAM

	FY 1990 <u>Actual</u>	FY 1991 <u>Estimate</u>	FY 1992 <u>Level A</u>	FY 1992 <u>Level B</u>	FY 1992 <u>Level C</u>
AD ASTRA					
Companies funded	8	2	2	2	2
Dollars leveraged	\$1,120,398	\$900,000	\$900,000	\$900,000	\$900,000
Jobs created	10	5	50	50	50
INCUBATOR					
Companies funded		5	5	5	12
Dollars leveraged		\$200,000	\$100,000	\$100,000	\$500,000
Jobs created		10	10	10	30

KANSAS TECHNOLOGY RESOURCE DATA BASE

	FY 1990 <u>Actual</u>	FY 1991 <u>Estimate</u>	FY 1992 <u>Level A</u>	FY 1992 <u>Level B</u>	FY 1992 <u>Level C</u>
<u>System implementation</u>					
Number of sites using system	0	3	7	7	7
<u>System operation</u>					
Inquiries processed	0	75	250	250	250
Follow-up projects initiated	0	10	40	40	40

SPECIAL PROJECTS

Intellectual Property Program:
 (Initiated in February of FY 1990)

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	FY 1990 Actual	FY 1991 Estimate	FY 1992 Level A	FY 1992 Level B	FY 1992 Level C
Presentations	10	20	20	20	30
Workshops	3	5	5	5	7
Seminars	1	3	3	3	5
Inventors given assistance	21	40	50	50	75
Inventors contacted	100	200	100	100	200
Number of patents issued to clients assisted by the program	--	5	5	5	10
Number of innovations successfully commercialized	--	1	5	5	7
Jobs created	--	10	10	10	50

Patent Depository Library:

(To be designated in FY 1991)

- This is a one-time grant from KTEC
 - The designee will supply projections for their performance indicators
1. Number of Kansans utilizing the library; and
 2. Increase/decrease of patents/copyrights issued to Kansans.

Invention Development Assist Pilot Program (IDAP):

(Implemented in FY 1991)

	FY 1990 Actual	FY 1991 Estimate	FY 1992 Level A	FY 1992 Level B	FY 1992 Level C
Inventors applied	--	62	60	60	100
Projects funded	--	6	12	12	12
Number of new products (result of IDAP program)	--	--	5	5	12

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KTEC

Telecommunications:
 (Implemented FY 1990)

1. Develop strategic plan:
 - a. Increased and broadened membership of consortium to include 20 organizations in FY 1990;
 - b. Established regular meetings of the consortium and members encouraged to communicate between meetings. Softened or removed barriers so members could focus on interests of the state and people rather than focus on special interests in FY 1990 and FY 1991;
 - c. Convinced consortium provider memberships to assist with development of a strategic plan in FY 1990; and
 - d. Strategic plan to be published in FY 1992.
2. Conduct video teleconferencing demonstrations to increase awareness of small business community:
 - a. Number of demonstrations to date--5
3. Establish a multi-site video teleconferencing testbed (projected early FY 1992):
 - a. Installation of equipment and use of the equipment; and
 - b. Number and quality of users.
4. Develop a consensus on a Kansas standard for video teleconferencing in order to encourage maximum system interoperability :
 - a. Standard to be published in FY 1992.
5. Initiate a research effort into video compression algorithms and coder/decoder systems:
 - a. Development of a codec which can be manufactured and marketed by a Kansas company in FY 1992 or FY 1993.

	FY 1990 Actual	FY 1991 Estimate	FY 1992 Level A	FY 1992 Level B	FY 1992 Level C
Stragegic Plan	--	--	complete	complete	complete
Demonstrations	5	6	5	5	5
Multi-state testbed users	--	--	10	10	30
Standards	--	--	complete	complete	complete
New companies	--	--	--	--	1

Quality Improvement Network (QIM):

(The Joint Legislative Committee on Economic Development has instructed Kansas Inc. to develop the criteria

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- Program emphasis targets will be maintained unless altered by Leadership Council.
- Recommendations and funding guidelines will be forwarded to Leadership Council as appropriate.
- New initiatives will be generated as required to meet overall program objectives.
- A minimum of 20 development projects will be funded in FY92.

PERFORMANCE INDICATORS:

KVAC in its Strategic Plan is committed to judge its success using the following measures:

KVAC

1. Number of jobs created or saved in Kansas agricultural processing industries.
2. Sales and profitability improvements of KVAC clients resulting from interaction with the center.
3. Profitability improvements in Kansas agriculture resulting from increased processing generated by KVAC assistance.
4. Cost savings generated through KVAC assistance.

Quantitatively measuring these KVAC contributions to economic development must occur over a several year period. In many cases technical contributions such as a new product do not become profitable for two to five years. Likewise, in job creation, the input of many factors besides technical are required making it difficult to directly link jobs and technical assistance. We will continue to look for quantitative measures and cite examples as they occur.

However, in the short term and on an annual basis we will use six indirect methods as measures.

1. Number of clients served, their location in the state and size of the community.
2. Degree of satisfaction with KVAC services as determined by our users.
3. Number of KVAC suggestions implemented and potential value.
4. Number of new and improved products, processes, and innovations introduced by our clients using KVAC services.
5. Number of projects authorized.
6. Average cost per project.

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KVAC

	Actual 1990	Goal 1991	----- 1992 -----		
			A	B	C
Clients served					
* new	88	36	30	30	36
* ongoing	32	48	48	48	48
Counties served	66	40	40	40	40
Suggestions implemented	--	50%	50%	50%	50%
New products	1	3	2	2	4
Projects authorized	23	20	15	15	20
Cost/project	\$ 15,035	\$ 18,000	\$ 18,000	\$ 18,000	\$ 18,000
Seminars sponsored	5	4	4	4	6
Reports Published	9	6	5	5	9
Cost savings documented	\$437,000	--	--	--	--
Jobs impacted	3	--	--	--	--

PERFORMANCE COMPARISON:

Funding history for KVAC shows that \$366,712 was expended in FY90 plus \$116,500 were committed to projects but not actually dispersed during FY90 due to awarding the grants late in the fiscal year and the time required to get contracts drawn and work underway. We had \$36,475 in undesignated monies that were rolled over into FY91. Monies available in FY91 are \$481,155 in new appropriation for KVAC, \$35,000 in new appropriation for projects earmarked by the legislature and to be managed by KVAC, and \$172,320 in rollover funds with \$135,851 of this encumbered or committed for projects. At the end of FY91 we anticipate having no rollover money but we expect to have a portion of our funds to be committed to projects, but not yet expended due to having 2/3 of our funds made available after 15 March 1991. This will make managing the cash flow difficult in FY91 and impact the results we will be able to achieve in this fiscal year.

For FY92 we are requesting \$201,000 for A&B level and 212,500 for C level for salaries and office operating expenses. This is the basis for managing the center and total center funding makes little difference in the operations/management expense. The difference in the A,B, & C budget is in the amount of matching commercialization funding that is available to support value added companies and capital outlay.

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VIII. FY 1992 BUDGET REQUESTS: A, B & C

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KTEC FY 1992 Budget Request

	Level A	Level B	Level C
Operations	\$677,669	\$677,699	\$730,000
Database	50,000	50,000	50,000
Centers	3,215,000	3,215,000	5,100,000
Matching Grants	1,049,684	1,049,684	1,500,000
Research Equipment Grants	0	0	700,000
Training Equipment Grants	0	112,347	250,000
SBIR	25,000	25,000	75,000
Seed Capital	100,000	100,000	500,000
Industrial Liaison	300,000	300,000	500,000
Special Projects	200,000	200,000	500,000
Total	\$5,617,353*	\$5,729,700*	\$9,905,000*

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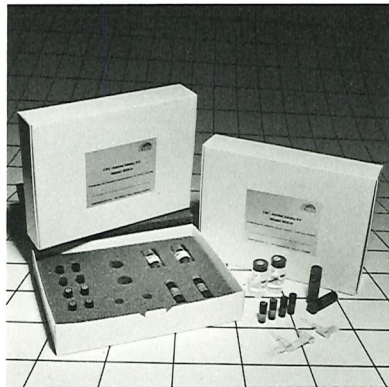
IX. SUCCESS STORIES

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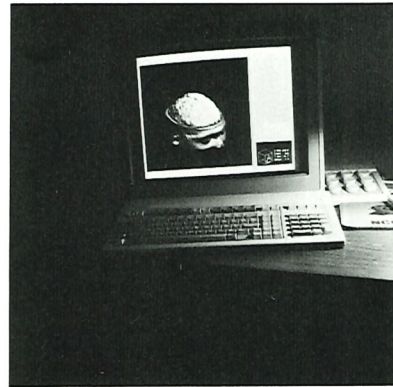
Investments in Kansas



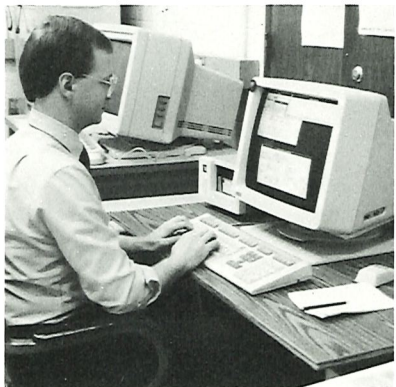
Superior Industries, Pittsburg



Oread Laboratories, Inc.,
Lawrence



3D Biomedical Imaging, Inc.,
Shawnee Mission



Kohlman Systems Research,
Lawrence



American White Wheat
Producers Association,
Atchison



Garden City Community
College, Garden City



Kansas Technology
Enterprise Corporation
112 West Sixth, Suite 400
Topeka, Kansas 66603

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KTEC is mid-way through its fourth year of operation. It's time to take a look at some of the partnerships we have fostered, the investments that we have made in the name of Kansas, and the companies that have found success through our assistance.

Many more of KTEC's investments in Kansas are on the verge of success. We are pleased and proud to keep you informed of Kansas' steady progress in advanced technology economic development.

William G. Brundage
President

Scope of Services offered by KTEC

KTEC Centers of Excellence

Advanced Manufacturing Institute
Kansas State University

Center for Excellence in Computer-Aided
Systems Engineering
University of Kansas

Center for Technology Transfer
Pittsburg State University

Higuchi Biosciences Center
University of Kansas

National Institute for Aviation Research
Wichita State University

Applied Research Matching Grants

Research Equipment Grants

Training Equipment Grants

Small Business Innovation Research Grants

Industrial Liaison

Special Projects

Telecommunications
Protecting Intellectual Property

Ad Astra Fund

Investment in new industry in Kansas

It often takes a unique partnership to foster economic development in a community. One example is the cooperative effort of the City of Pittsburg, Pittsburg State University (PSU), and other economic development groups in convincing Superior Industries to locate in Pittsburg. Superior Industries is one of the leading manufacturers of stylized aluminum wheels for Ford and General Motors.

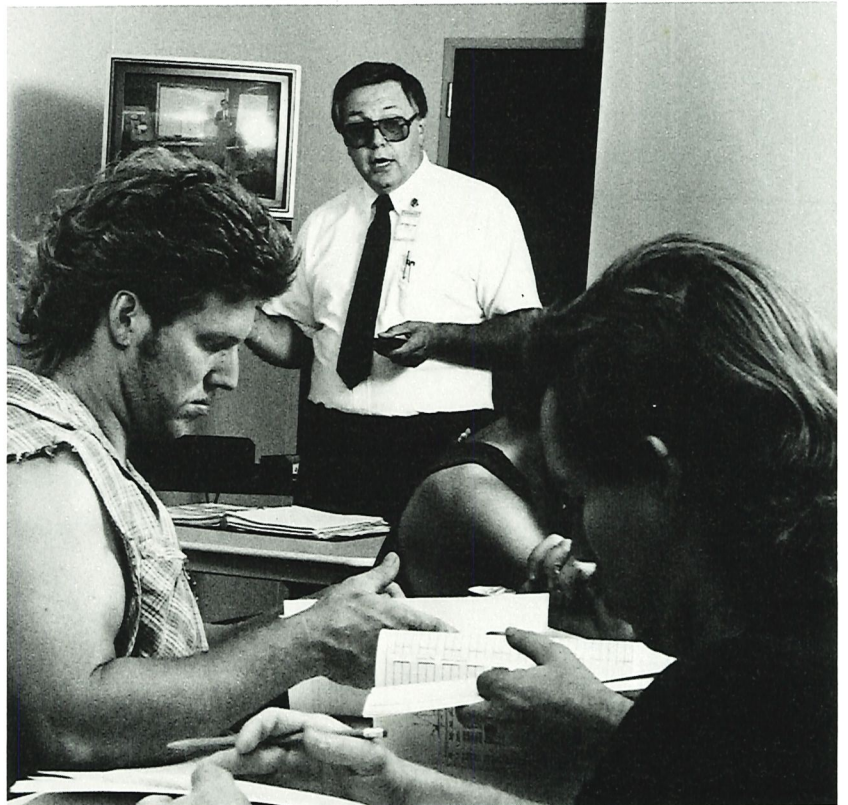
Twenty months ago, Superior Industries International, Inc. announced plans to open a plant in Pittsburg. Training programs offered through the Technical Education Department at PSU influenced that decision. During the first year, more than 500 Superior employees have completed basic training.

This summer, the Center for Technology Transfer (KTEC's Center of Excellence at PSU) assisted the company again in planning and implementing a course in statistical process control (SPC). SPC is using statistics as a means to bring a process into control. At Superior, they're putting it to use in the manufacturing atmosphere.

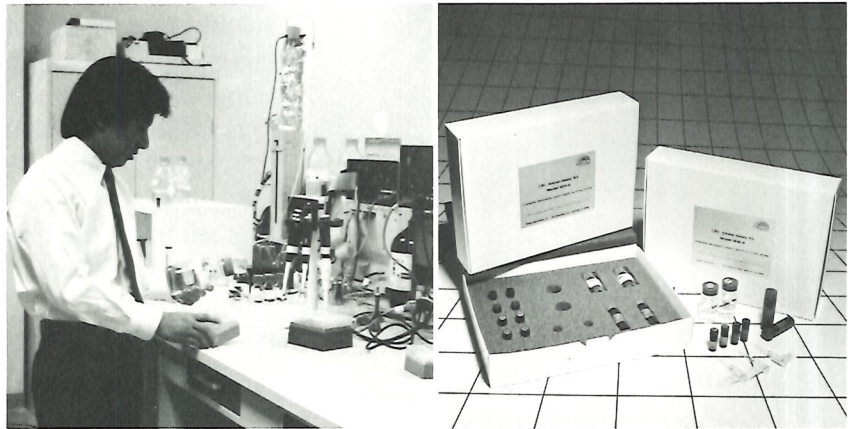
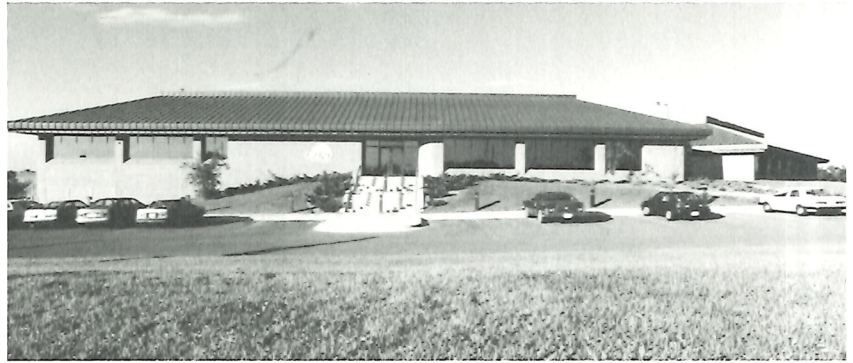
Providing technical resources for Kansas businesses is an important function of KTEC Centers of Excellence.

"The specialized training offered at PSU was a key factor in our decision to locate in Pittsburg. It has been very beneficial to our start-up operation," Ralph Shilling, Director of Human Resources, Superior Industries, Midwest Division.

Dr. Larry Williamson, Professor in Manufacturing Engineering Technology, PSU, teaches a 10-hour segment of classes on statistical process control to all Superior Industries' employees. Photo courtesy of University Photo Services, Kansas State University, Dan Donnert photographer.



Oread Laboratories, Inc., Lawrence; Dr. O.S. Wong in his laboratory; and the CBI Amine Assay Kit.



"From discovery in the lab to a useful product is a complex process which often can take several years," Dr. O.S. Wong, Oread Laboratories, Inc., Lawrence.

Investments in biotechnology

A 1984 discovery by scientists at the Center for BioAnalytical Research at the University of Kansas is now being marketed as an analytical research test kit.

Oread Laboratories, Inc., Lawrence, is marketing CBI Amine Assay Kits primarily for use by laboratory scientists. Oread is the principal industrial contact for the Higuchi Biosciences Center (one of KTEC's Centers of Excellence at K.U.).

Dr. O. S. Wong, Analytical Pharmaceutical Chemistry Section Leader at Oread explained that the kits are used to detect low level amino acids in biological samples, such as blood. The results can assist biomedical research scientists in disease diagnosis.

Initial sales of the CBI kit are projected to be \$100,000 per year. Eventually the technology may be used in as many as 20 different analytical test kits, marketed nationally and internationally, with greatly expanded sales potential.

Investment in start-up companies

3D Biomedical Imaging Inc. (3DBI), Shawnee Mission, found their niche in a specialized market two years ago by designing computer software for three-dimensional medical, industrial and scientific visualization. For example, in the medical field the application assists in diagnostics, surgical planning and patient treatment.

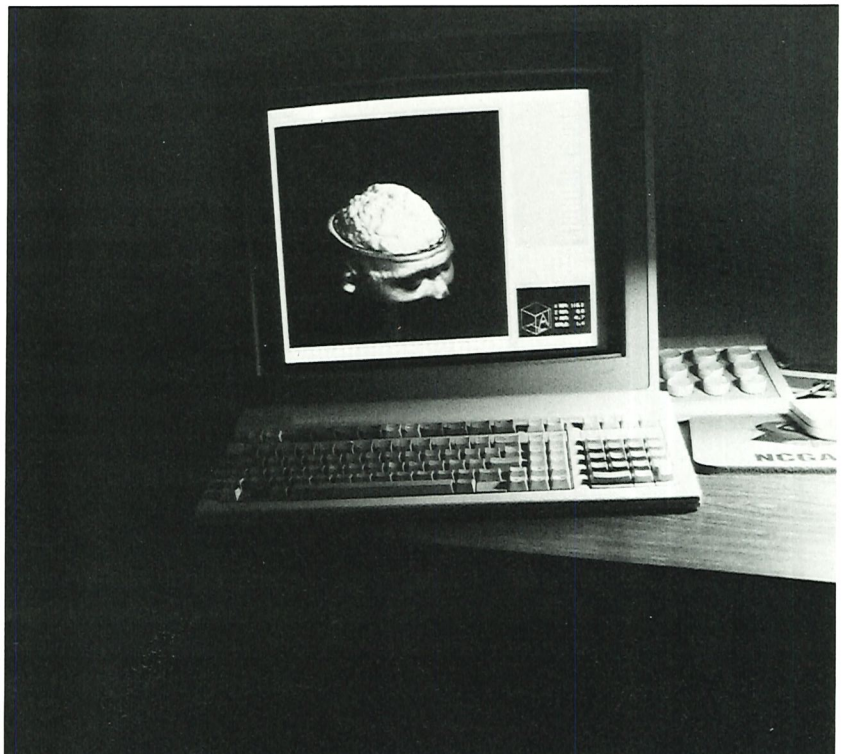
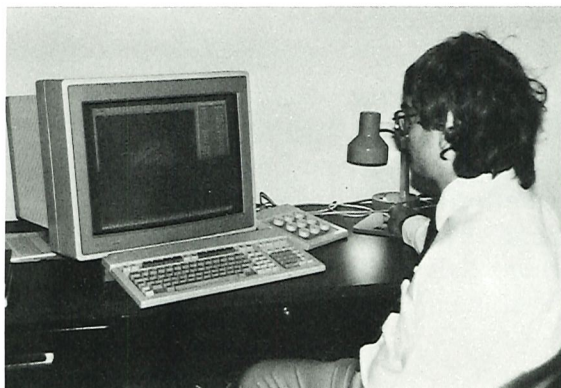
3DBI was founded in 1987 by Michael Gordon, Ph.D., an associate professor of pharmacology at the University of Kansas Medical Center, and Glen DeLoid, M.D.

In October 1989, 3DBI was selected for seed capital investment by Campbell-Becker, Inc., of Lawrence, manager of the Ad Astra Fund. KTEC is a limited partner in the Ad Astra Fund.

Today, there is an international market for the customized software package that retails for \$25,000 to \$35,000. Excellent growth is expected in 1991 due to national and international OEM agreements in place. Projected sales in 1991 are expected to reach \$400,000.

"Without the Campbell-Becker investment, we would not have been able to generate the local seed capital to develop the company," Michael Gordon, Ph.D., president of 3D Biomedical Imaging, Inc., Shawnee Mission.

Right, three-dimensional visualization of a skull; below, Dr. Michael Gordon demonstrates the software.



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“Our options for utilizing computers were: lease a computer, buy a computer, or travel to the customer site in Florida. After checking around, it was much more cost beneficial to us to use the facilities at K.U.,” Paul Baker, president, Kohlman Systems Research, Lawrence.

Darin Landis, an aerospace engineer with Kohlman Systems Research, spent more than two weeks utilizing the facilities of CECASE.



Investment in Kansas' technical resources

When Kohlman Systems Research, Lawrence, found themselves in need of a DEC MicroVax computer to complete work on a software development project, their choices were few. In fact, the choices were to travel to Florida, or find a computer in Kansas.

They chose to utilize the facilities of KTEC's Center for Excellence in Computer-Aided Systems Engineering (CECASE) at the University of Kansas. The cost comparison was to spend about \$3,000 per week in Florida, or use CECASE's facilities at approximately \$200 per week. Serving the technical needs of Kansas businesses is an integral part of the activities at KTEC Centers of Excellence.

The final product, Flight Test Applications Software Package, was demonstrated for the Yugoslavian Air Force in October. The software produces final analyzed post-flight results with one-third of the time and effort of other systems. It allows major decisions in the testing and development of aircraft and systems to be based on final results. Sales projections for the software package are \$300,000 over the next three years.

Investment in Kansas' "s'wheat resources

"KTEC has played a pivotal role in the development of the white wheat industry in Kansas," Kent Symns, manager American White Wheat Producers Association, Atchison.

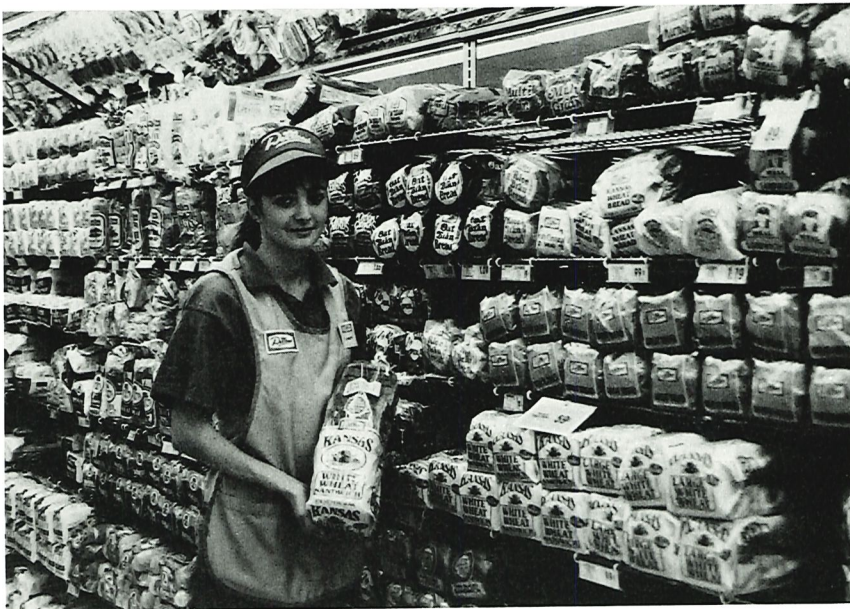
With KTEC's assistance, Kansas has excelled in developing the growth and marketing of hard white wheat--one of the State's first alternative crops that requires no new capital investment for production, follows the same chain of events as red wheat, and offers added-value potential. White wheat products are lighter in color and milder in flavor which makes them more appealing to consumers.

Interest in marketing hard white wheat started in the 1970's at Kansas State University. It began gaining momentum in 1988 when the American White Wheat Producers Association (AWWPA) and the Kansas Wheat Commission (KWC) became involved. Grants through KTEC's Applied Research Matching Grant program awarded the AWWPA \$57,969 and the KWC \$388,000. The KTEC grants were matched by \$96,954 and \$712,745, respectively.

Tangible results:

- in November 1989, Kansas' Dillons grocery stores began selling Kansas Wheat Bread. More shelf products are in the planning stages.
- Stafford County Flour mills are milling white wheat for the first time in 20 years, selling it under the Hudson Cream label.
- a Topeka company is baking white wheat tortillas and marketing them locally.
- producers hope to make an extra 70 cents a bushel (1 cent per loaf of bread) on 40 million bushels of wheat per year. This could mean as much as \$28 million to the Kansas economy.

Cindy Musslin, Dillons Grocery Store, 29th & California, Topeka, stocks the bread shelves every day with Kansas Wheat Bread.



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"KTEC gave us enough money to make an impact! We are pleased to be meeting the needs of our industrial clients in southwest Kansas," Dr. Gary Jarmer, Dean of Occupational Education at Garden City Community College, Garden City.



GCCC students and instructor work through a class exercise with the Festo equipment. Left to right, Dan Culbertson, student, Martin Neff, instructor, and Jose Leyva, student.

Investment in Kansas' human resources

In June 1989, Garden City Community College (GCCC) was awarded a \$70,483 Training Equipment Grant from KTEC. A hand-in-glove partnership emerged.

Left to right, Gerald Hundley, classroom instructor, Gary Jarmer, Dean of Occupational Education, and Dr. James Tangeman, President of GCCC, discuss the range of opportunity available to students in training on the Festo Equipment. Photos courtesy of Lydia Smith, GCCC, Information Services.

Festo Corporation, one of the world's largest manufacturers of automatic manufacturing equipment and hydraulic and pneumatic training systems, and GCCC matched KTEC's grant with \$222,108. Festo is headquartered in West Germany, with corporate offices in New York City.

Today, students utilize more than \$300,000 in automated manufacturing equipment, including computers and programs, in laboratories at GCCC. A spin-off reward came in 1990 when Festo designated GCCC the first Authorized Festo Learning Center in the United States.

The course orients students/workers to the types of equipment used in meat packing, the aircraft industry and other manufacturing. The first classes offered in the Fall of 1989 enrolled more than 40 students; more than twice that number have excelled and passed the entry level courses. Currently 89 students are enrolled in beginning and advanced levels of instruction.

"We want to add value to Kansas' raw agricultural products, but we must add value to our workforce, too. We have to train and retrain the workers of Kansas. We have to do it well if we are to succeed," said Dr. Gary Jarmer.

