Kansas
Department of Commerce

High Performance Computing Capabilities:

SURVEY

of Kansas' leading companies and research universities

Performed by the Kansas Department of Commerce

In collaboration with

The University of Kansas and Kansas State University

March 2012

House Vision 2020
2-20, 2012
Attachment 1

a. Statement of Purpose:

Confirm the potential benefits to Kansas business with enhanced computing capacity invested in our university IT infrastructure, and evaluate support for industrial collaborations between companies and universities throughout the state of Kansas.

b. The Team:

Dr. Joe Heppert – University of Kansas

Dr. Dan Andresen – Kansas State University

Ken Stafford – Kansas State University

Jason Glasrud – Kansas Department of Commerce

c. Our Partners:

- Information and Telecommunications Technology Center – University of Kansas
- Bioscience and Business Technology Center – University of Kansas
- Enterprise Center of Johnson County
- National Institute for Aviation Research – Wichita State University
- MAMTC
- Kansas Polymer Research Center – Pittsburg State University
- Advanced Manufacturing Institute – Kansas State University

d. Timeline:

February 3 – 10: Distribute survey around study group for feedback

February 10 – 17: Implement group recommendations and draft final version

February 20: Hearing on HPC Survey – Vision 2020 Committee

February 20 – 27: Implement committee recommendations to survey

February 27: Distribute to committee chair for final comment

March 2: Finalize recipient list with partner organizations

March 5-6: Distribute HPC survey to recipients list

March 20: Survey results due to partner organizations/study group

March 20 – 27: Follow-up calls w/ partner organizations to discuss survey process and results

March 27 – April 10: Compile data from survey and draft final report

April 20: Final report due to Vision 2020 Committee

e. Survey Questions for Businesses: Capturing the Missing Middle

(Current IT platforms, software programs, staffing & expertise, customer requirements, R&D: in-house or outsourced, expectations for growth, competition, etc…)

1. Do the terms "high performance computing" or "supercomputing" have any particular meaning to your company? Explain.

2. Please describe your company's information technology capacity:
    a. In-house single server:
    b. In-house, multi-server:
    c. Contract, third party provider:
    d. N/A:
    e. Unknown:

3. What, if any, research and development work is performed in collaboration with universities in Kansas?
    a. Do you perform research and development activity with research institutions out of state?

4. What are your average software costs on an annual basis?

5. What is your company's annual budget for IT?
    a. Hardware:
    b. Software:
    c. Payroll:
    d. Third party computing and support:
    e. Collaborative agreements:

6. Do you have in-house IT support, or is this contracted with a third-party service provider?

7. Is your company engaged in projects that require simulation or modeling technology? Do you find that these requirements are not currently available, or cost prohibitive?

   If so, please explain:

8. Does your company have significant unanswered questions about potential applications of computing, simulation or modeling technologies?

9. Are your partners, suppliers and/or competitors in your industry facing similar barriers to access and cost of technology upgrades?

10. Has your company evaluated a significant capital investment to upgrade systems?

11. Is your company being pushed by customers to have upgraded CAD software?

12. Are you limited by software/hardware constraints? In other words, does your firm decline work, or outsource projects due to the lack of computing power?

13. Has your company's barrier to entry in technology upgrades primarily resulted from difficulty with obtaining proper expertise to plan technology upgrades, the initial required capital outlay, the ongoing maintenance expense, and/or cost of staffing? All of the above?

    Please explain your company's growth strategy. Is capital investment in technology platforms a component to this strategy? Is outsourcing of computing, simulation or modeling part of this strategy?

14. Has your company ever considered relocating out of Kansas in order to have access to more sophisticated technologies or systems?

15. Are you aware of instances where lack of availability of advanced technologies has been a barrier to the relocation of partners, suppliers and related businesses to Kansas?

16. If the technology and computing capacity that your company requires to diversify into new products and markets was made available to you through the university system, would you be interested in exploring this opportunity further?

f. Sample of Proposed Recipients

(Goal of 100 recipients with approximately 80% responding)

1. AGCO
2. Aeroflex
3. Airbus – North America
4. Alexander Manufacturing
5. Arsalon Technologies
6. Arcom/Eurotech
7. ATC Composites
8. Associated Wholesale Grocers
9. BATS Trading
10. Black & Veatch
11. Blue Cross Blue Shield of Kansas
12. BNSF
13. Bombardier Learjet
14. Caravan Ingredients
15. Cargill
16. Cavern Technologies
17. Central Packaging
18. Cerner
19. Cessna
20. Elecsys Corporation
21. Euronet Worldwide
22. Freightquote.com
23. Garmin Industries
24. General Motors (and suppliers)
25. Great Plains Manufacturing
26. Goodyear
27. Google
28. Hawker Beechcraft
29. Hill's Pet Nutrition

Sample of Proposed Recipients, continued...

30. InkCycle
31. Josten's
32. Johnson Controls
33. Koch Industries
34. Mid-State Aerospace
35. National Beef
36. NIC
37. Perceptive Software
38. Porter McGuffie
39. Quintiles
40. Rand Construction
41. Ruf Strategic Solutions
42. Selex Systems
43. Shawnee Mission Medical Center
44. Spirit Aerosystems
45. Sprint
46. Tyson Foods
47. University of Kansas Medical Center
48. Via Christi
49. Vista Manufacturing
50. VSR Financial

g. Survey Questions for Universities:
Current University Capacity

(Current data center spaces, IT platforms, HPC research hardware, HPC data storage capacity, and personnel dedicated to research HPC)

1. Please describe major data center spaces for HPC on your campus:

Site of Data Center	Primary Purpose	Approx. Date of Construction	Approx. Square Footage	Most Recent Date of Upgrade or Renovation
1.				
2.				
3.				
4.				
5.				
6.				

2. Please describe the IT platform(s) that serve these data centers:

Site of Data Center	Description of Supporting IT Platform
1.	
2.	
3.	
4.	
5.	
6.	

3. Please describe the approximate HPC computing and storage capacity of each data center site:

Site of Data Center	Computational Capacity	General Description of Hardware (incl. age)	Storage Capacity	General Description of Storage Hardware (incl. age)
1.				
2.				
3.				
4.				
5.				
6.				

4. Please describe numbers and roles of personnel on your campus dedicated to support HPC:

Description of HPC support position	Number of individuals with these positions	Scope of responsibilities for individuals occupying these positions
1.		
2.		
3.		
4.		
5.		
6.		

Current University/Private Sector Collaborative HPC Activity

(Number and types of collaborations related to HPC with in-state and out-of-state private sector entities, approximate annual dollar value of collaborations, and sectors represented by the collaborations)

1) List the approximate number and types of collaborations with private sector entities related to HPC:

Type of Private Sector Entity	Number of collaborations over the past 3 years	Brief description of the nature of these collaborations
In-state private sector entities		
Out-of-state private sector entities		

2) List the approximate cumulative dollar amount of these collaborations over the past 3 years:

3) Identify the economic sectors associated with these collaborations (e.g. aircraft, agriculture, oil and gas, water, energy, manufacturing, human health, animal health, etc):