



**Kentucky Department
of Education**

**Kentucky Department of Education
IT Assessment and Optimization Study
Final Report**

May 4, 2004

Engagement: 220604280

Gartner

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Introduction

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IT Assessment and Optimization Project Final Report
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Introduction

Report Organization

- **This report presents Gartner’s findings and recommendations for the KDE IT assessment and optimization study completed on May 3, 2004.**
- **These findings and recommendations reflect input from interviews with KDE business departments and executive staff, Office of Educational Technology (OET) management staff and four school district CIOs. Additional information was derived from comprehensive data collection, a project workshop, and review of documentation.**
 - **Note:** In this report, KDE refers to the KDE State Agency, OET refers to the IT organization within KDE that provides IT services to both the KDE agency and to School Districts
- **The Report is Organized as Follows:**
 - **Executive Summary:** This section summarizes the key findings of the IT assessment and highlights major recommendations for implementation by KDE in order to further increase IT cost efficiency and enhance the effectiveness of IT services and investments.
 - **Key Findings:** Summarizes salient points and information collected from interviews. Presents consistent themes from these interviews. Also includes pertinent information from the review of background documentation and research of best practices.
 - **Recommendations:** Presents Gartner’s recommendations that are based on analysis of the current KDE business and IT environment, KDE’s business goals and objectives, best and common government practices, and input from stakeholders.
 - **High-Level Implementation Roadmap:** Provides guidance for the implementation of the recommendations through prioritized IT programs. Each program has a number of associated projects that should be implemented over the next three years.

Introduction

Project Objectives

KDE Engaged Gartner to Achieve the Following Key Project Objectives:

- **Assess the Efficiency and Cost Structure of Office of Education Technology (OET) IT Services**
 - The assessment covers services provided within the OET budget of \$ 16.1M
 - The scope of the cost benchmarking study is for IT services provided by OET on behalf of KDE
 - IT services being provided by OET to school districts are to be summarized qualitatively, but not benchmarked
 - Costs were collected based on the scope of OET’s responsibilities (schools and KDE)
 - » This adjustment was agreed to by all parties at the kickoff
 - » OET estimates that 97% of its efforts are school and not KDE agency based
 - This adjustment is aligned with how Gartner collects and reviews benchmark data
- **Assess the Alignment of OET’s IT Strategy to KDE’s Business Strategies and Priorities**
- **Review the Effectiveness of the Following OET IT Management Functions and Processes**
 - IT Governance, IT Program Management, IT Investment Management, IT Vendor Management
- **Develop Recommendations For Optimizing IT Services**



Executive Summary

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Executive Summary

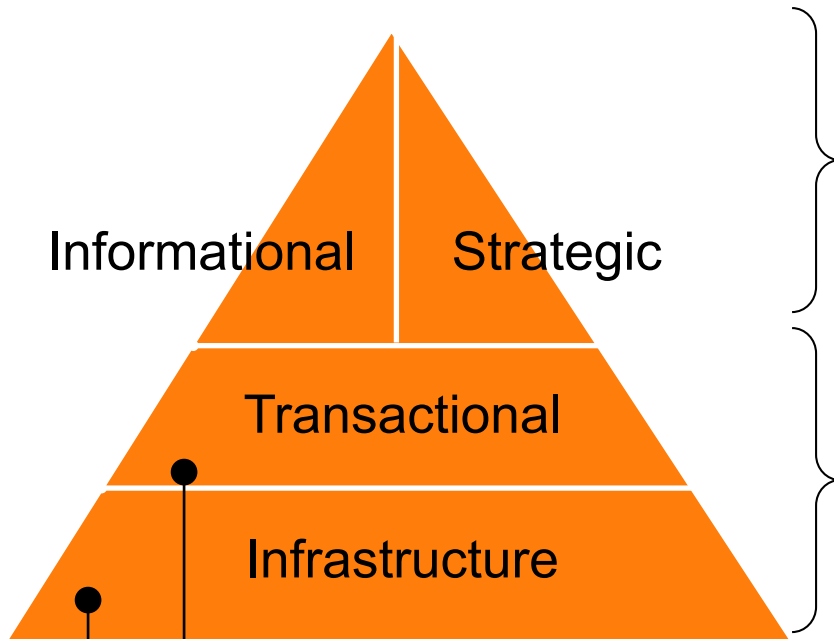
Summary of Findings

- **As a result of a comprehensive plan of IT investment over the last 10 years through the KETS Program, the State of Kentucky has significantly improved deployment of technology to its schools. (Details: Slide 7)**
- **Despite its state population being one of the lowest adopters of technology, Kentucky K-12 schools perform above average and sometimes in the top tier in terms of teacher and student access and use of technology. (Details: Slide 20)**
- **KDE through OET has also made significant strides in adopting forward looking IT management strategies that have potentially saved the State millions of dollars in terms of business process efficiencies and technology maintenance and support.**
 - Kentucky is uniquely positioned in its technology deployment strategy in that OET provides service not only to the KDE agency but to school districts through a shared services model that provides Statewide support for electronic mail, network infrastructure, help desk and statewide student information and financial management systems. (Details: Slide 36)
- **OET continues to operate at a higher efficiency than peer organizations in most IT areas. (Details: Slide 40)**

Executive Summary

Summary of Findings

How IT Supports the Business



- OET has been facing challenges in meeting KDE business unit expectations as it begins to move from being a supporter of the business (i.e., providing infrastructure and transactional support) to becoming an enabler of the business (i.e., informational and strategic support)

- KDE has been successful and is unique among all the states in its development of robust foundational elements for IT infrastructure services in support of KDE and the school districts

- E.g., State-wide e-mail system that is unique among peer organizations
- No complaints about the enterprise network that is also unique among peer organizations

Transactional Examples

- Standardized Statewide Student Info. Mgmt. (STI)
- Standardized Financial Mgmt. (MUNIS)

Strategic Examples

- Instructional Technology Integration & Policy
- Virtual High-School and Virtual Library

Infrastructure Examples

- Standardized Statewide E-mail System
- Robust Enterprise Network (LAN and WAN)

Informational Examples

- Common Data Standards
- Integrated Data Access (MAX Program)

Executive Summary

Summary of Findings

- **However, as is typical of maturing IT organizations, OET has varying levels of credibility with its key customers and stakeholders. (Details: Slide 53)**
 - Credibility is higher where more resources and management attention has been provided.
 - For the most part, responsibility for IT governance has shifted to OET, with limited KDE business unit participation. IT governance mechanisms do not ensure KDE business owner accountability for IT projects. *** Note that most IT projects are actually KDE business transformation projects with IT components**
- **Therefore in order to become even more effective and to increase its credibility, OET must accelerate its maturity as an IT organization (Details: Slide 83)**
 - OET must transition from being a utility-oriented (providing basic IT infrastructure) to a service-oriented (IT enabled business solutions) organization.
- **Due to budget shortfalls, KDE is faced with the possibility of budget cuts and therefore has to develop strategies to deal with limited IT resources. The possibilities include:**
 - **Eliminating IT Services:** Cut shared IT services provided to schools, and leave individual school districts to provide these services if they can afford them.
 - **Become More Effective with Limited Resources:** OET is already a very lean organization. Gartner analysis shows that OET could be more effective by further developing some of its IT management processes. (Details: Slide 34)

Executive Summary

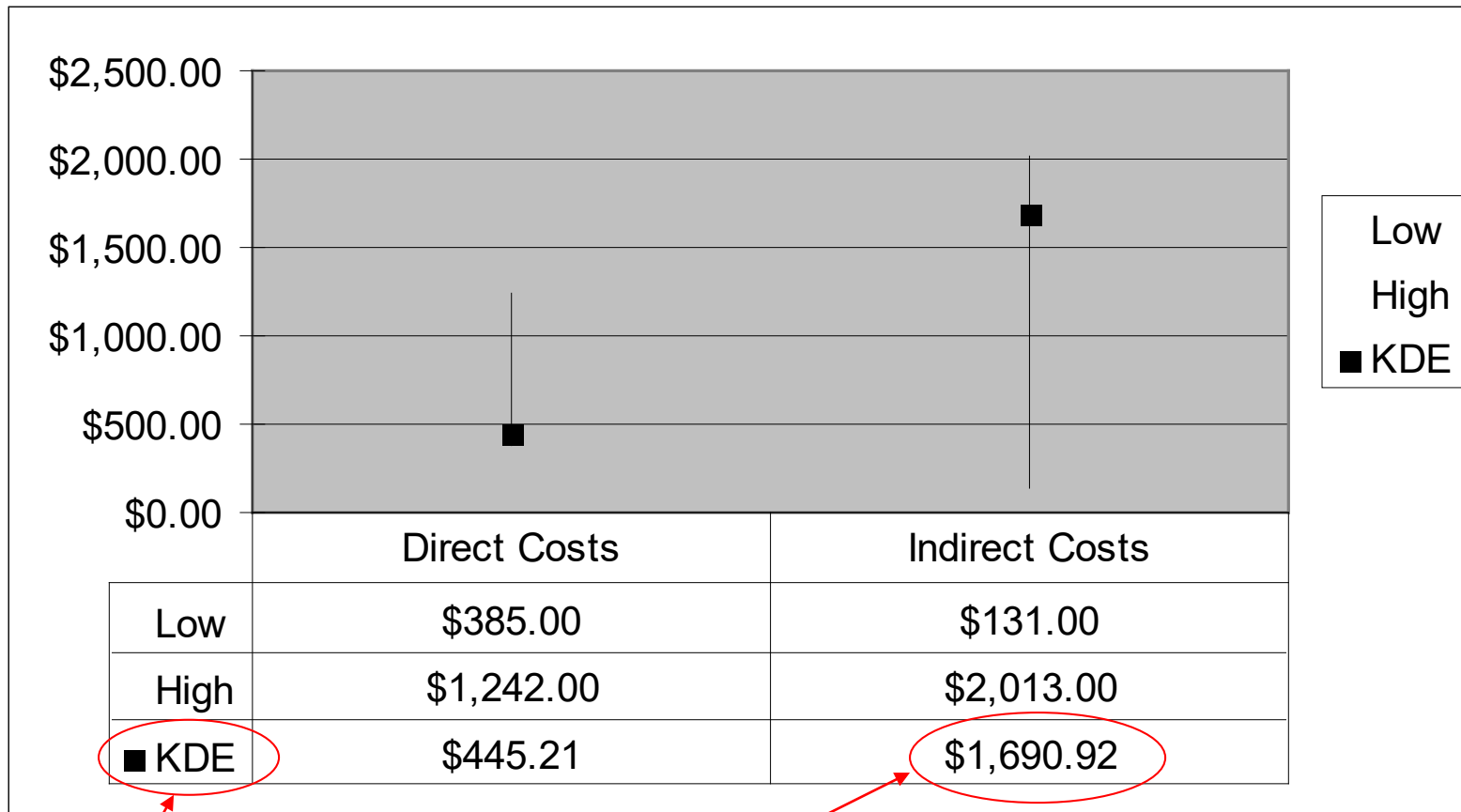
Summary of Findings

- **Continued funding is required to ensure that OET makes this transition successfully with the ultimate benefit of an efficient and effective IT organization that helps to further the mission of KDE and contribute to its strategic business directions.** (Details: Slide 30)
- **Desktop computing infrastructure for School Districts is aging when compared to peer states. In fact, these states are rapidly overtaking Ky in the quality of desktop deployed in schools.** (Details: Slide 39)
- **While OET has already recognized and began to make this transition by offering shared IT services to school districts, there are challenges that it faces in order to successfully make the transition:**
 - Bridging the gap between IT and business planning and management through an appropriate governance structure *(Details: Slide 51)*
 - Maturing the current IT service delivery model *(Details: Slide 82)*
 - Improving IT program management *(Details: Slide 72)*
 - Instituting effective IT investment management practices *(Details: Slide 97)*
 - Improving IT vendor management effectiveness *(Details: Slide 116)*
- **Expectations and Alignment of OET's Role to Support KDE on a Strategic Level Need Further Clarification** (Details: Slide 18)
 - Unclear Role of OET in the Definition and Execution of IT Education Policy
 - Unclear Role of OET in Provision and Integration of Technology Tools For Learning

Executive Summary

Summary of Findings

- KDE's (and OET's) spend is lower in direct costs which will increase (correspondingly) the indirect costs (soft costs) effects on all users



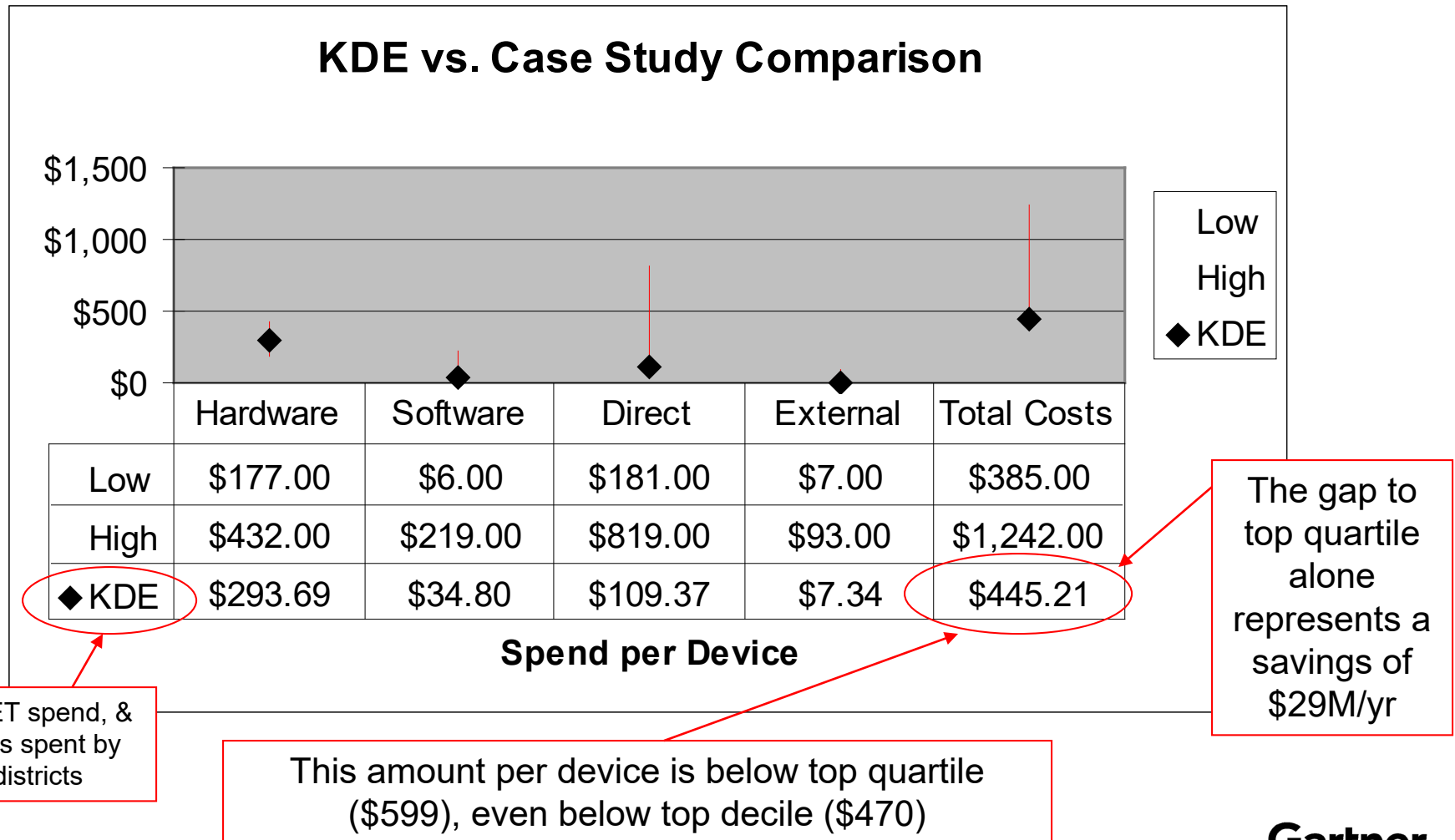
Includes OET spend, & KETS funds spent by school districts

This amount per device translates to \$338M for KDE (total)

Executive Summary

Summary of Findings

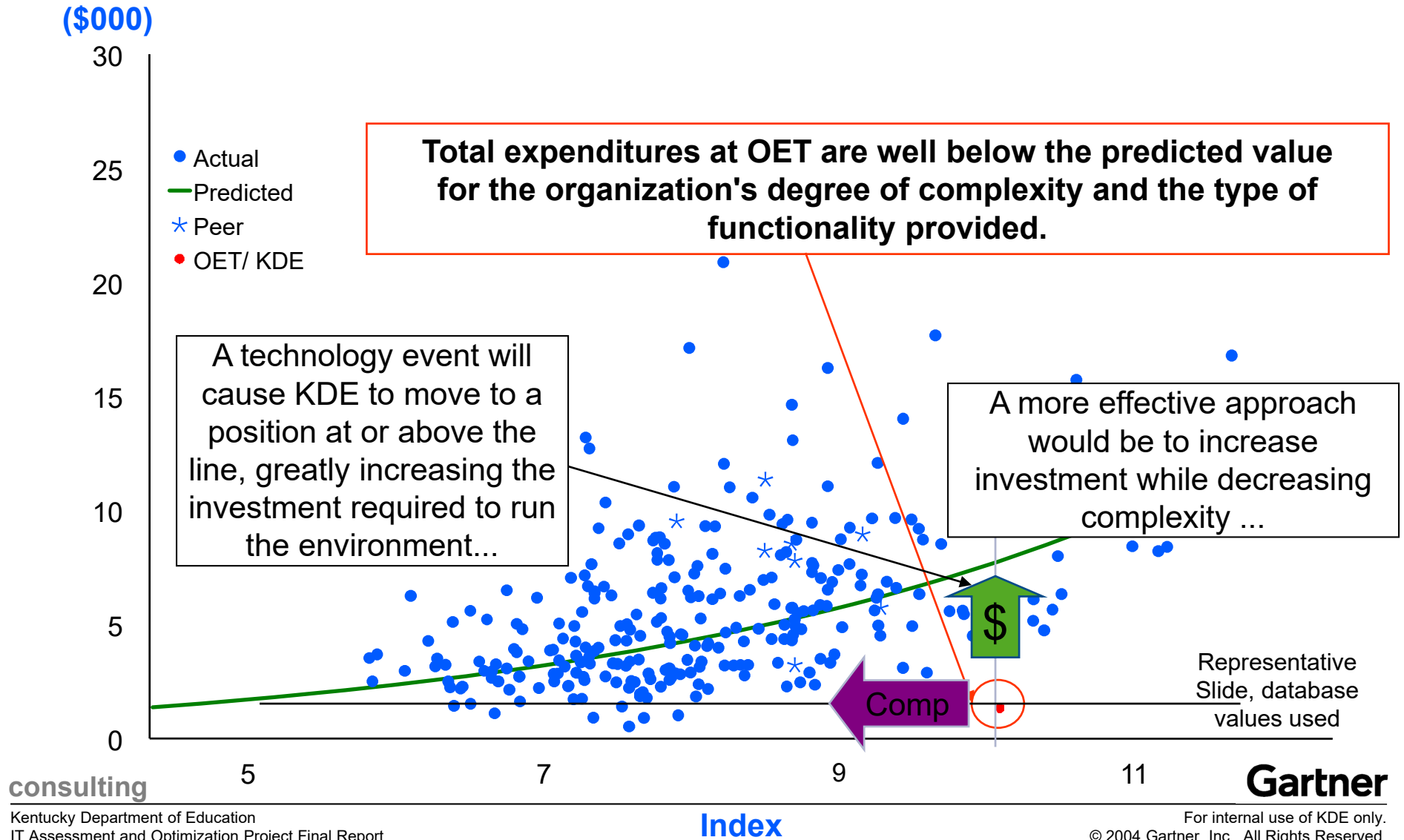
- KDE's (and OET's) IT spend is lower in all areas of direct spend. This is especially evidenced in IT staffing, which is partially due to shared services efficiencies (unusual for K-12) and understaffing (not unusual for K-12)



Executive Summary

Summary of Findings

Total IT Expenditure per User by Complexity Index



Executive Summary

Summary of Key Recommendations

Following are Tactical Recommendations (Accomplished in Less Than One Year):

■ Increase IT Efficiency

□ Conduct a Formal Review of all IT Projects Over \$250,000 (or Other Determined Size)

- What projects are considered high priority?
- Are the projects really generating business value?
- Considering tangible deliverables and resources consumed is the project worth continuing?
- What are the short and long term impacts of aggressively canceling or putting projects in hold?

□ Continue Infrastructure Consolidation

- Continue efforts to consolidate and centralize base level utility elements of the IT infrastructure that can be provided more efficiently through centralization and shared services
- Formalize an enterprise IT architecture in order to reduce and develop an IT Infrastructure Refresh Strategy

■ Increase IT Effectiveness

□ Fully Develop the Role of IT Business Relationship Manager for KDE Agency

□ Develop a Formal and Regular Communications Process with School Districts

□ Create and Test an IT Disaster Recovery and Business Continuity Plan

- For the OET, and Supervise Development at the School District Level

□ Fully Develop a Division of Instructional Technology within KDE

Executive Summary

Summary of Key Recommendations

Following are Strategic Recommendations (Accomplished in Two to Three Years):

■ Institute a Well Defined IT Governance Structure

- Bridge Gap Between KDE Business Units and IT Management and Operations
- Formalize Strategic, Operational and Technical Governance
- Fully Develop Necessary Governance of Shared Service Organization

■ Officially Define OET's IT Service Delivery Model

- Portfolio of Services: Develop Opportunities for Additional Shared Services
- Define Service Cost Implications and Setup Process for Funding
- Develop Service Level Delivery Expectations
- Develop Service-Focused Internal Operational Processes

■ Develop a Portfolio Management Investment Management Process

- Project Business Case Process
- Project and Application Portfolio Management Process

■ Set up a Program Management Office

- Formalize Project Management Practices
 - PM Training, Methodology and Tools
 - Facilitate Better Tracking and Monitoring of IT Projects

Executive Summary

Summary of Key Recommendations

Strategic Recommendations (Continued):

- **Further Develop an IT Sourcing Strategy for Application Development and Future Shared Services**
 - Reduce augmented IT staff by acquiring commercial software and fully outsourcing application development
 - Develop a sourcing strategy for current and future shared services OET can't deliver on par with the marketplace to maximize IT efficiency
- **Establish a Vendor Management Competency**
 - Develop Contract Structures
 - Use of Flexible Master Contracts
 - Establishment of SLA and other Vendor Performance Management Capabilities
- **Deploy an Asset Management System**
 - Software Licensing Management
 - Enforcement of Standard Configurations
 - Use a Tool for Technology Planning, e.g., Technology Refresh
- **Leverage Possible IT Shared Services With other Government IT Entities**



Alignment of KDE Business and IT Direction

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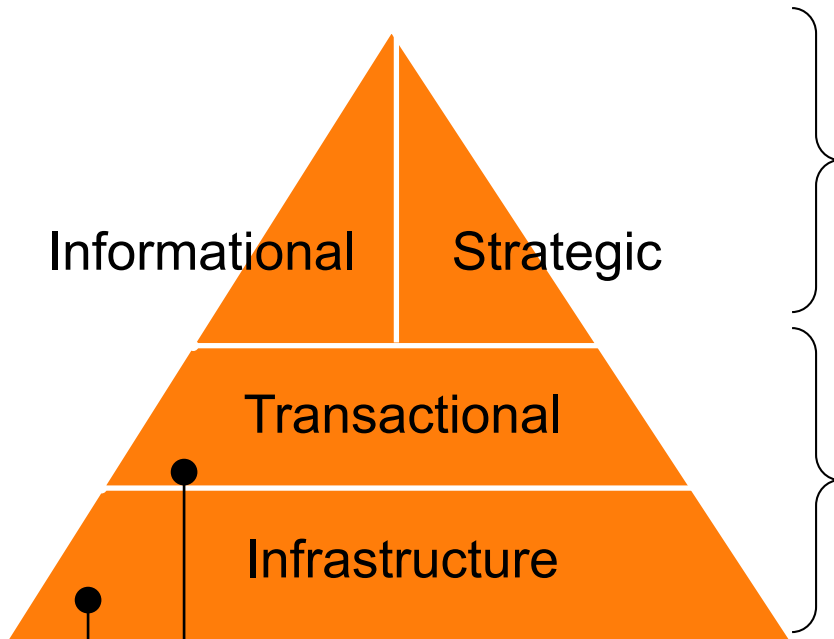
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Alignment of KDE Business and IT Direction

Findings and Observations

How IT Supports the Business



- OET has been facing challenges in meeting KDE business unit expectations as it begins to move from being a supporter of the business (i.e., providing infrastructure and transactional support) to becoming an enabler of the business (i.e., informational and strategic support)
- KDE has been successful and is unique among all the states in its development of robust foundational elements for IT infrastructure services in support of KDE and the school districts
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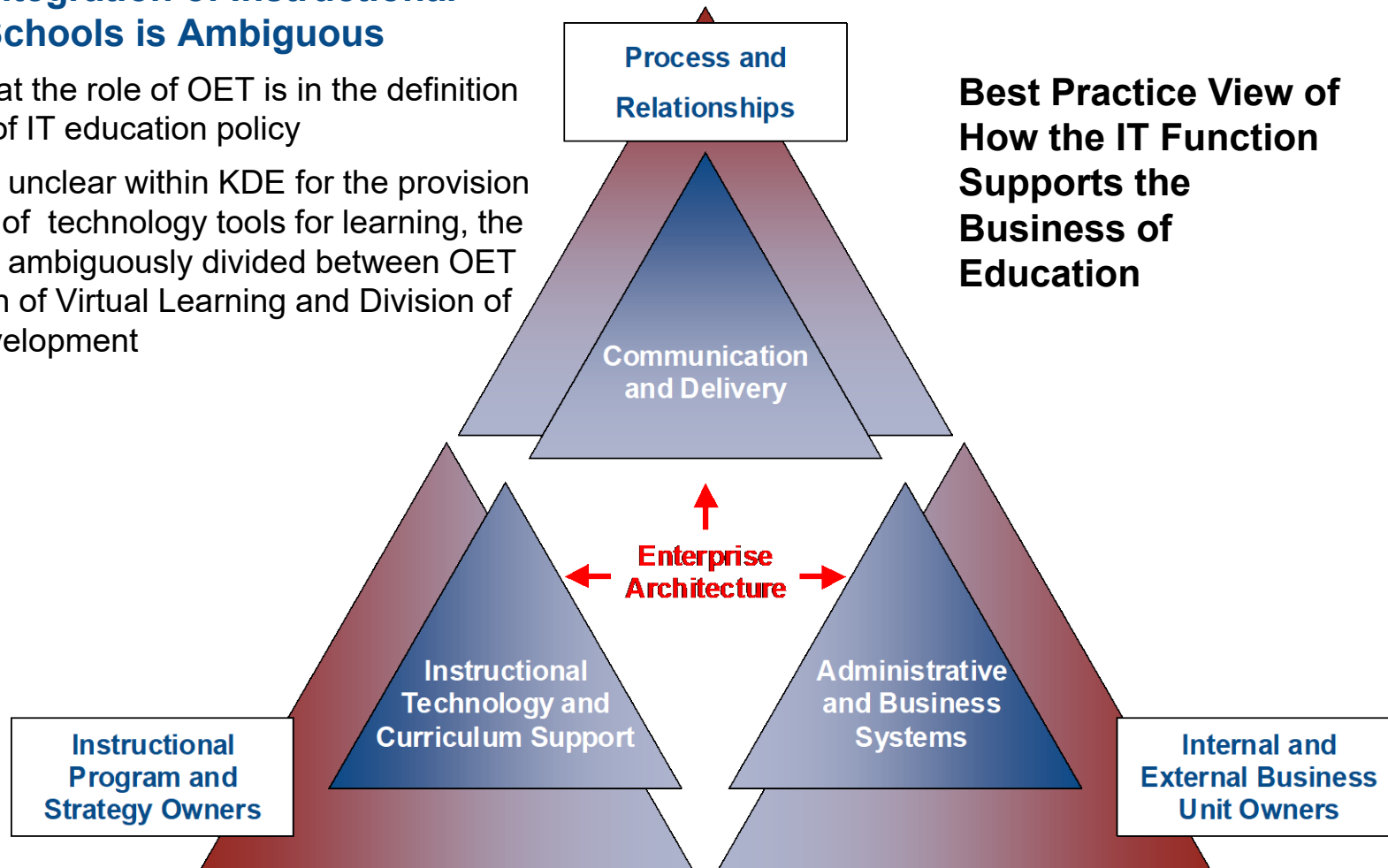
- Common Data Standards
- Integrated Data Access (MAX Program)

Alignment of KDE Business and IT Direction

Findings and Observations

■ Current Role of OET in the Definition of IT Policy and the Integration of Instructional Technology in Schools is Ambiguous

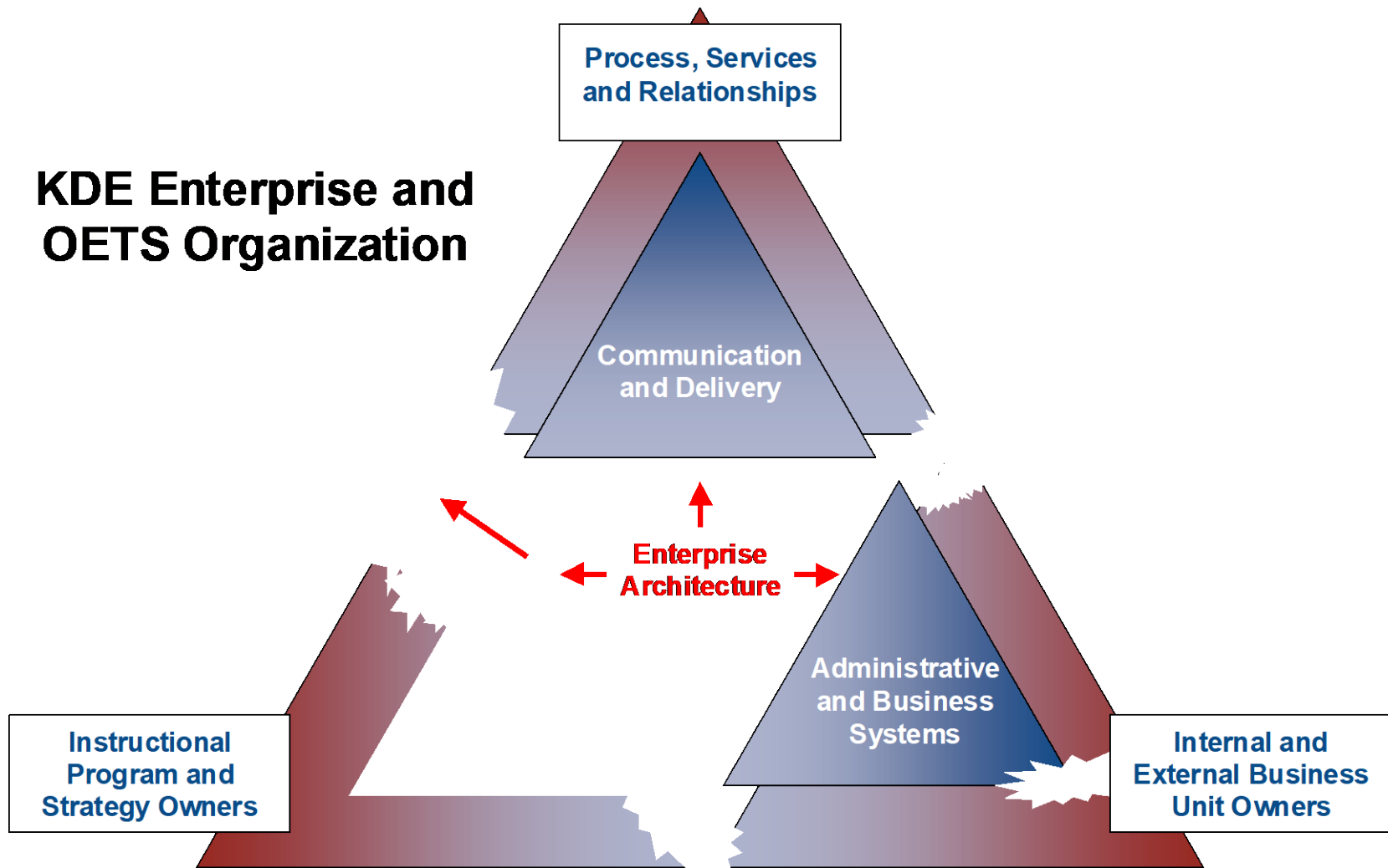
- It is unclear what the role of OET is in the definition and execution of IT education policy
- The role is also unclear within KDE for the provision and integration of technology tools for learning, the role is currently ambiguously divided between OET and the Division of Virtual Learning and Division of Curriculum Development



Alignment of KDE Business and IT Direction

Clarity of OET Support for KDE's Strategic Directions

KDE Enterprise and OETS Organization



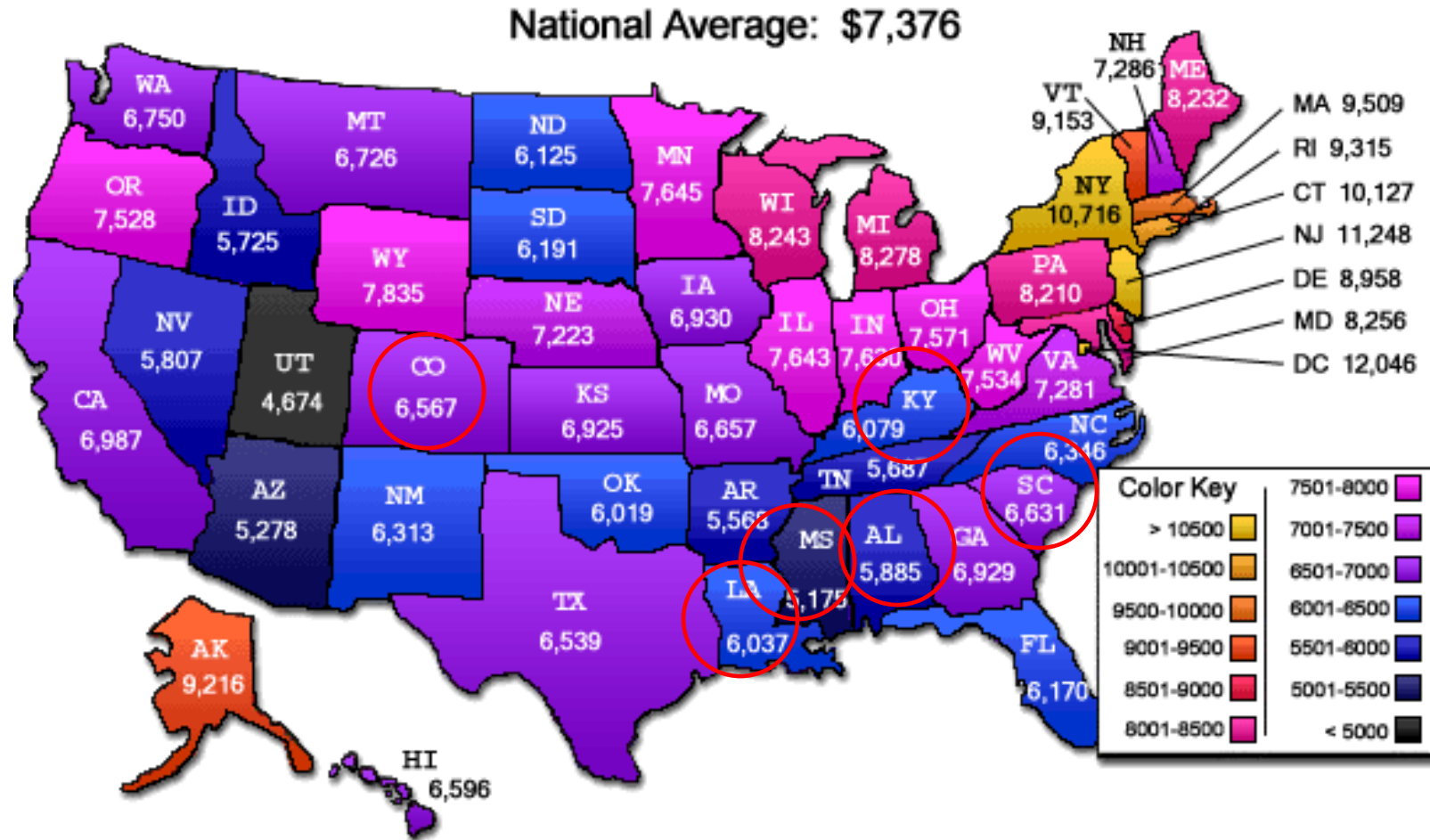
Alignment of KDE Business and IT Direction

Findings and Observations

- **Despite its state population being one of the lowest adopters of technology, Kentucky K-12 schools perform above average and sometimes in the top tier in terms of teacher and student access and use of technology. (*2002 Data - Situation May Have Changed Significantly)**
- **To assess the quality of technical deployment, Gartner compared Kentucky to four other states with similar education profiles, i.e., comparable population, number of schools and number of students. The chart on the next slide shows the comparison states chosen**
 - Louisiana, Mississippi, Alabama, Colorado, South Carolina
- **Use of Technology (*2002 Data Situation May Have Changed)**
 - Top-Tier use of Computers by Teachers
 - Top-Tier use of E-mail by Teachers
 - Top-Tier use of Computers in Classroom
- **Access to Technology (*2002 Data Situation May Have Changed)**
 - Better than Peers in Student to Computer Ratio
 - Better than Peers for % of Classes Connected to the Internet
 - Good Student to Internet Connected Computer Ratio
 - Better than Peers School Access to Internet
 - Low-Tier % of Computers on End-of-Life Hardware & Software

Alignment of KDE Business and IT Direction Findings and Observations

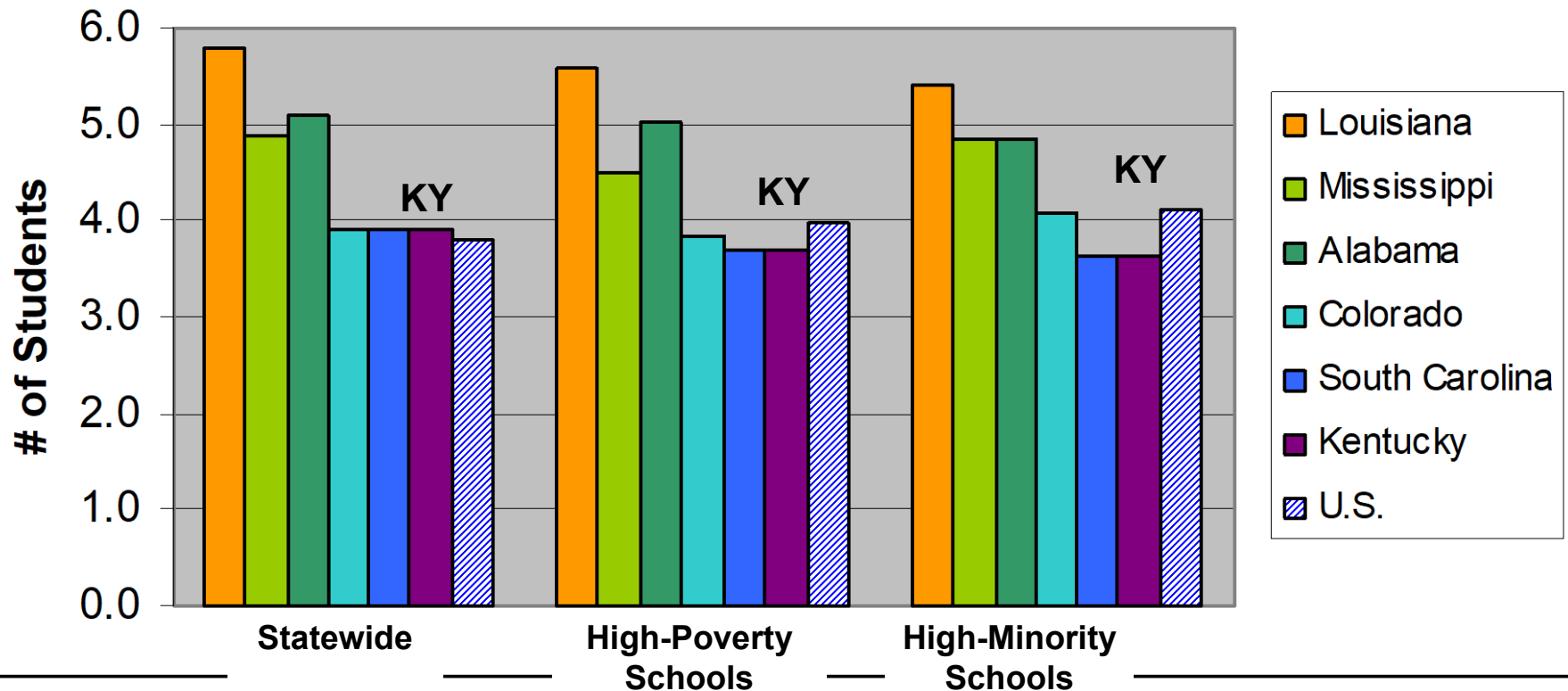
Current Per-pupil Expenditures for Elementary and Secondary Schools: School Year 2000-2001



Alignment of KDE Business and IT Direction Findings and Observations

Number of Students Per Computer (2002)

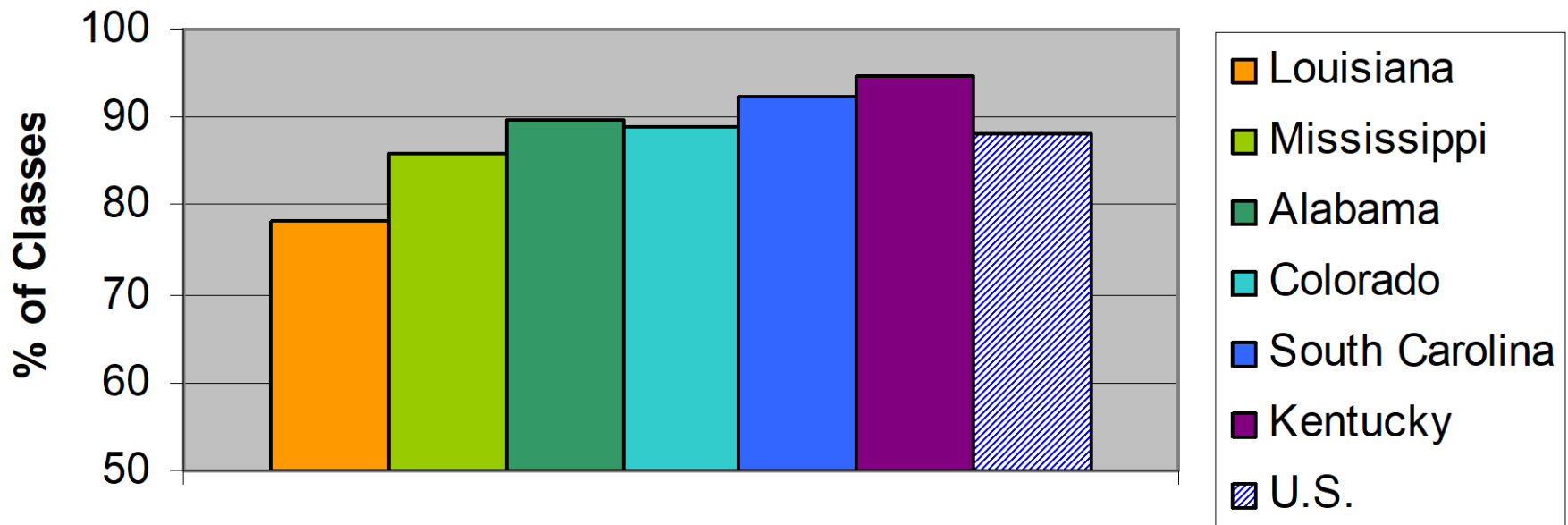
Note: Lower is Better



Source: Education Week Magazine, "Technical Survey 2003"

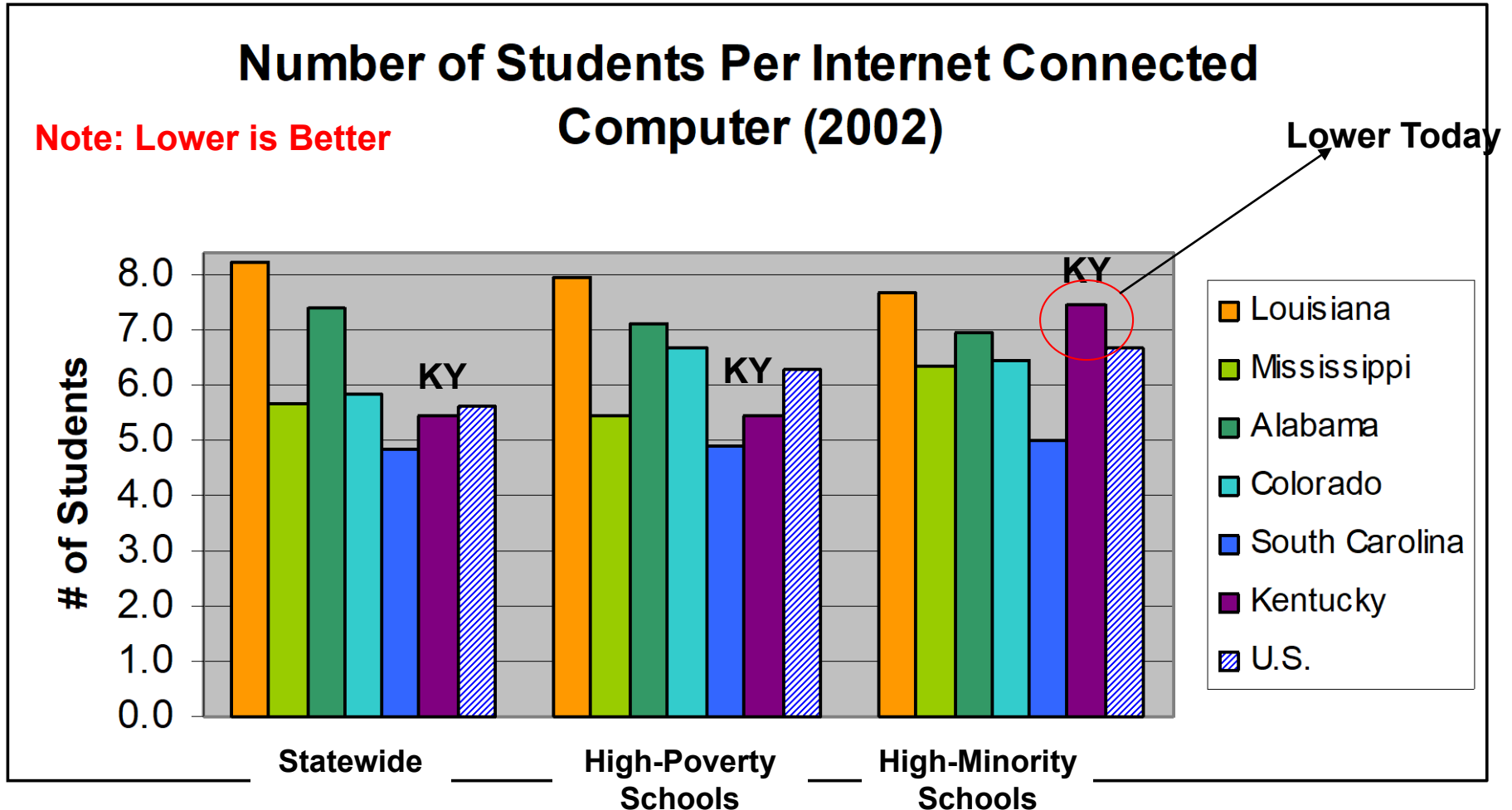
Alignment of KDE Business and IT Direction Findings and Observations

% of Classes with Internet Access (Schools with Internet Access Only)



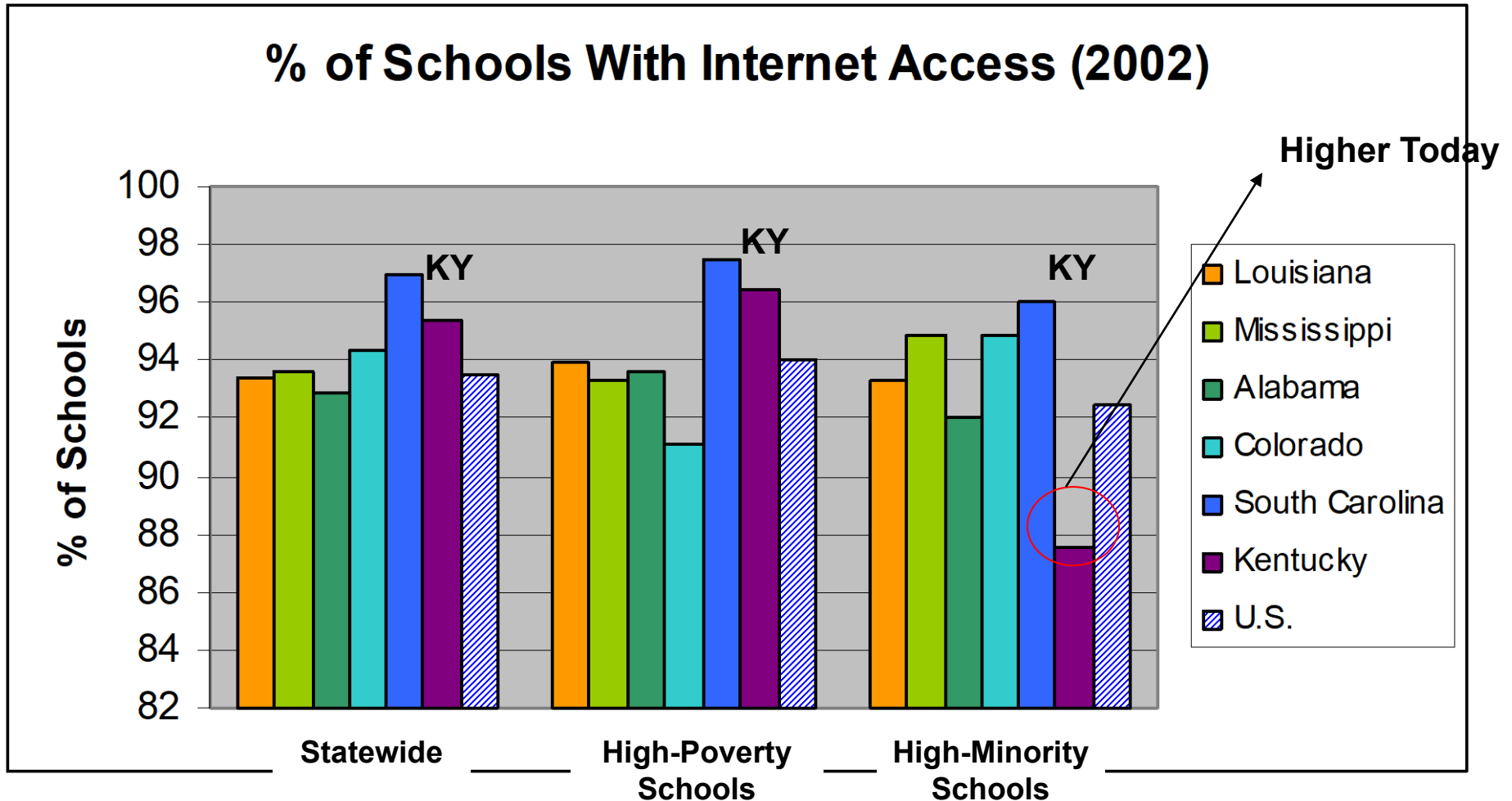
Source: Education Week Magazine, "Technical Survey 2003"

Alignment of KDE Business and IT Direction Findings and Observations



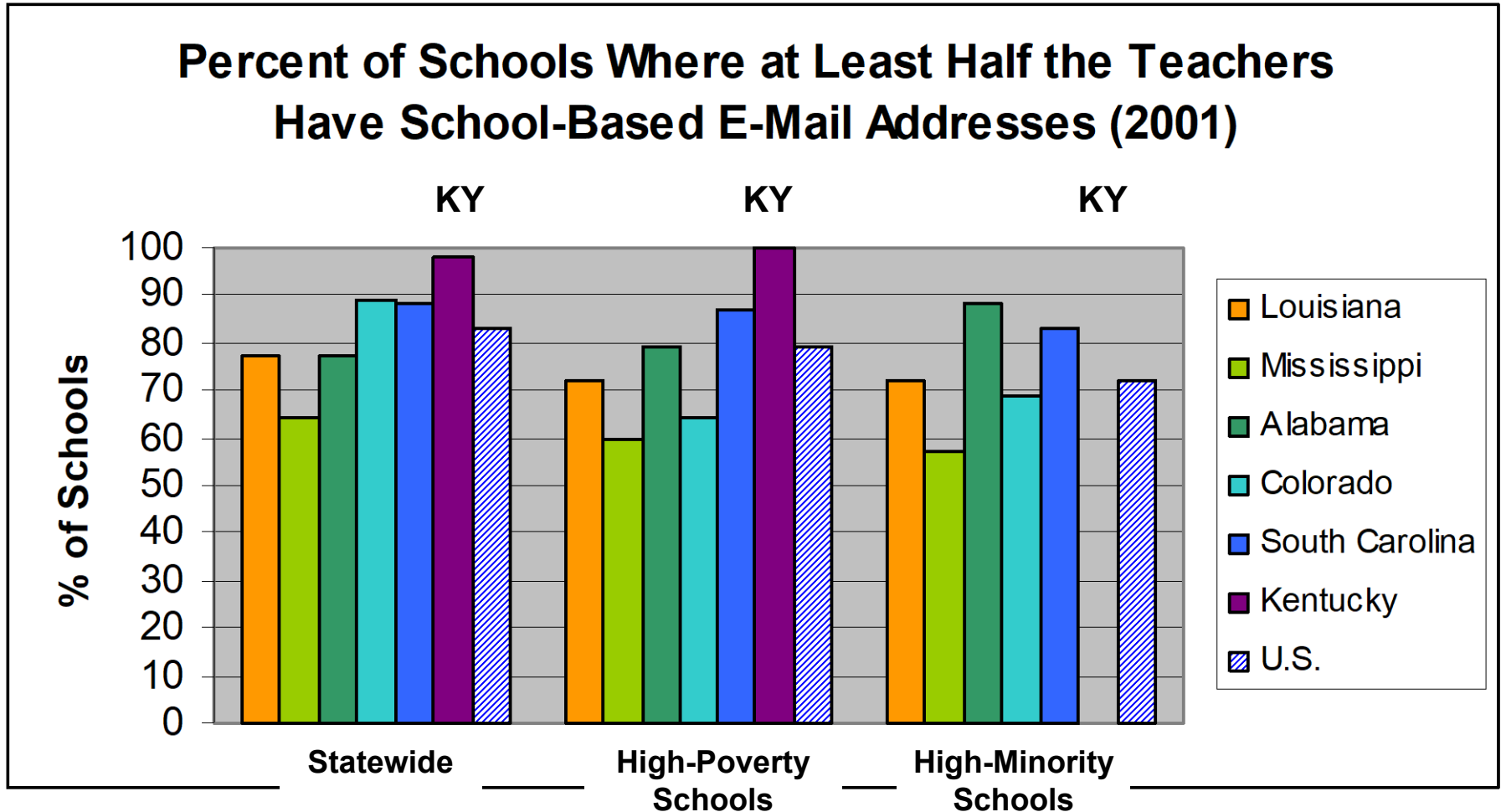
Source: Education Week Magazine, "Technical Survey 2003"

Alignment of KDE Business and IT Direction Findings and Observations



Source: Education Week Magazine, "Technical Survey 2003"

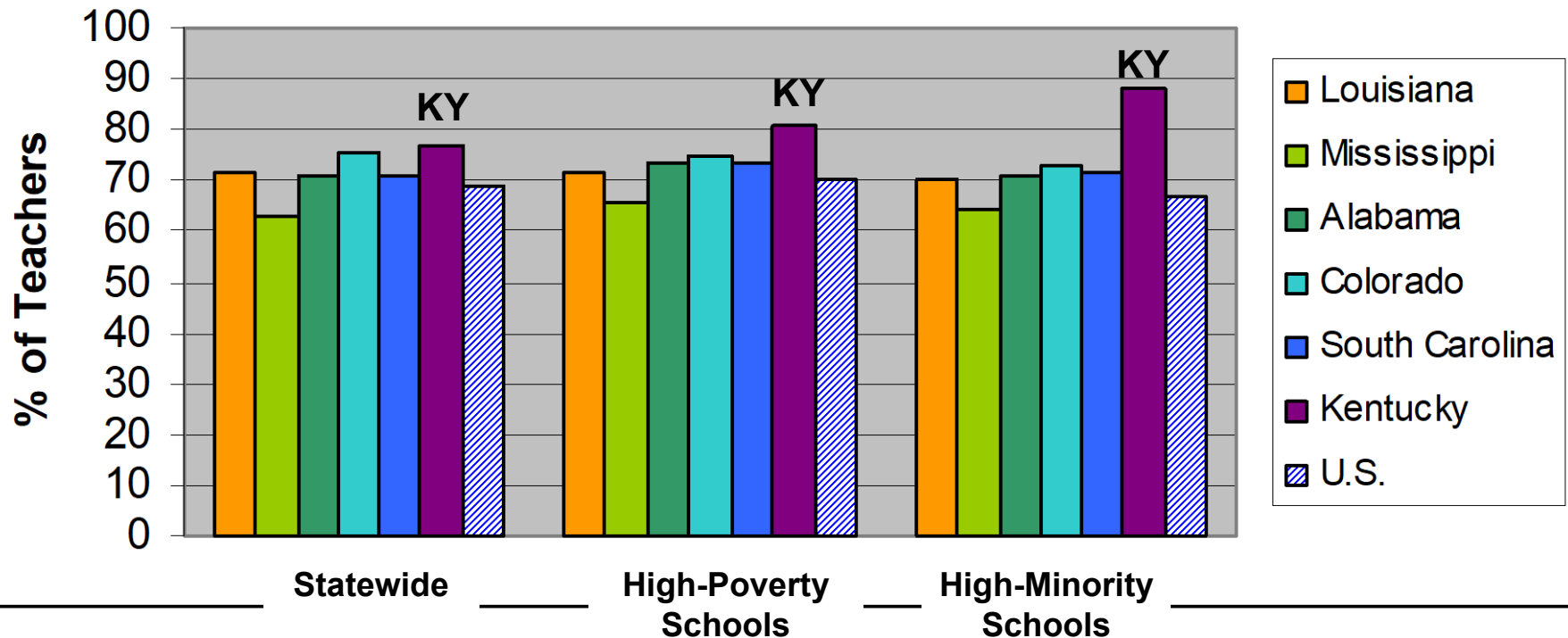
Alignment of KDE Business and IT Direction Findings and Observations



Source: Education Week Magazine, "Technical Survey 2003"

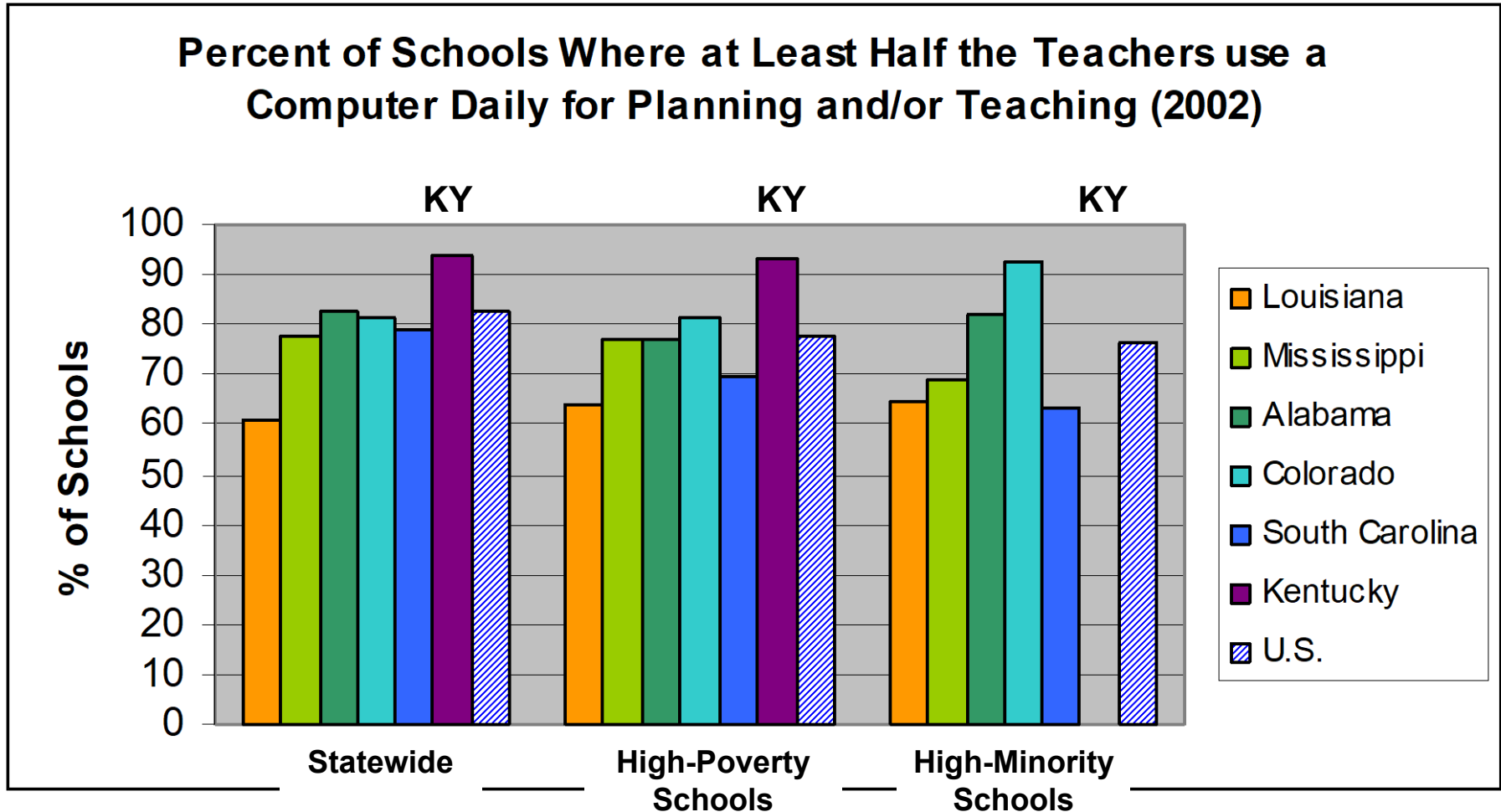
Alignment of KDE Business and IT Direction Findings and Observations

Percent of teachers whose students use computers during class time (2000)



Source: Education Week Magazine, "Technical Survey 2003"

Alignment of KDE Business and IT Direction Findings and Observations



Source: Education Week Magazine, "Technical Survey 2003"

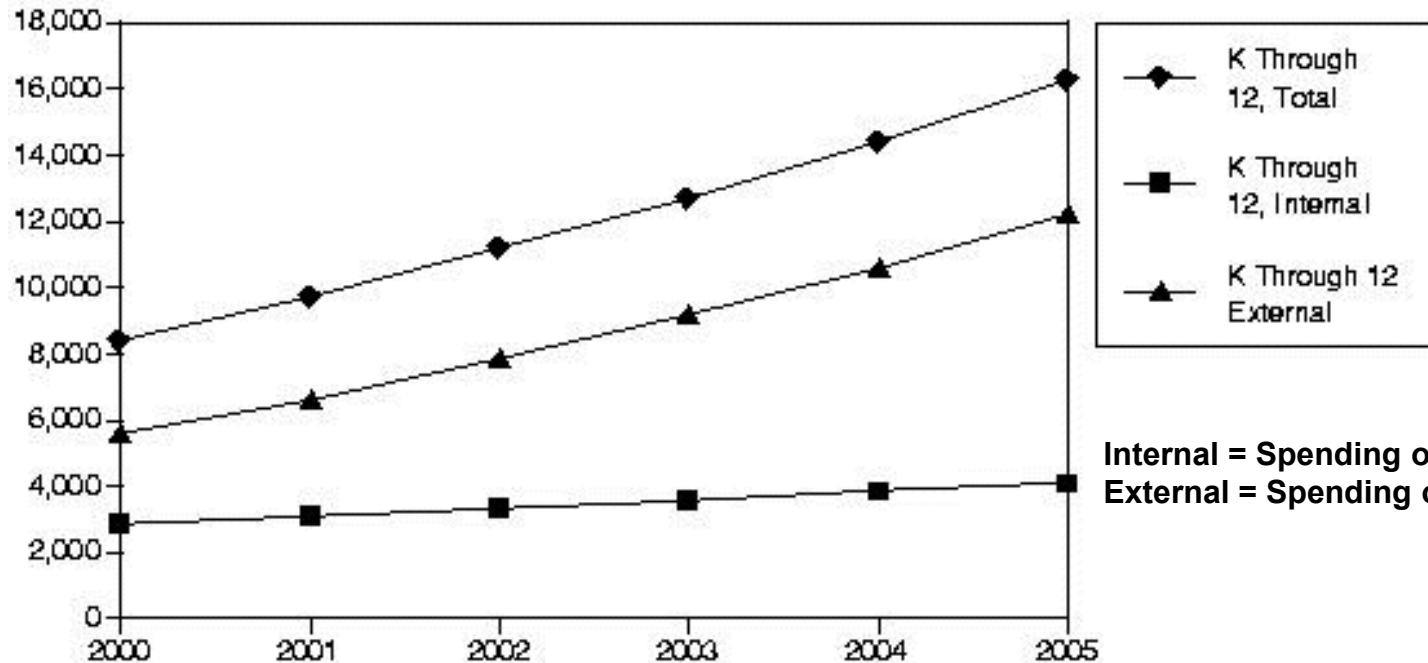
Alignment of KDE Business and IT Direction Recommendations

- **Conduct a Realignment of IT and Business Strategy For the Following**
 - Role of OET in the Definition and Execution of IT Education Policy
 - Role of OET in Provision and Integration of Technology Tools For Learning
- **Fully Develop a Division of IT Policy for Education and Instructional Technology within KDE (Best Practices Indicate that this Function is most Effectively Located Within an IT Organization)**
 - The responsibility for the development of IT policy and the integration of instructional technology in schools should occur within a defined functional division in KDE.
 - Best practices indicate that such a function is located within the main IT organization, in this case OET.
 - This division will provide IT services to instructional business owners based on enterprise needs
 - The division will provide a cohesive approach to instructional technology within KDE
 - The division will address potential IT diversity and lack of standardization that occur over time when multiple agencies seek and implement their own educational technologies

Alignment of KDE Business and IT Direction Recommendations

- Continued funding is required to ensure that OET makes its transition from contributing to infrastructure and transactional objectives to providing and strategic business support of KDE and School Districts. This will result in a more efficient and effective IT organization that helps to further the mission of KDE .
- Gartner estimates that IT spending in K-12 in the United States will continue to increase as follows:

Millions of Dollars



Internal = Spending on internal IT org. resources
External = Spending on external (vendor) resources

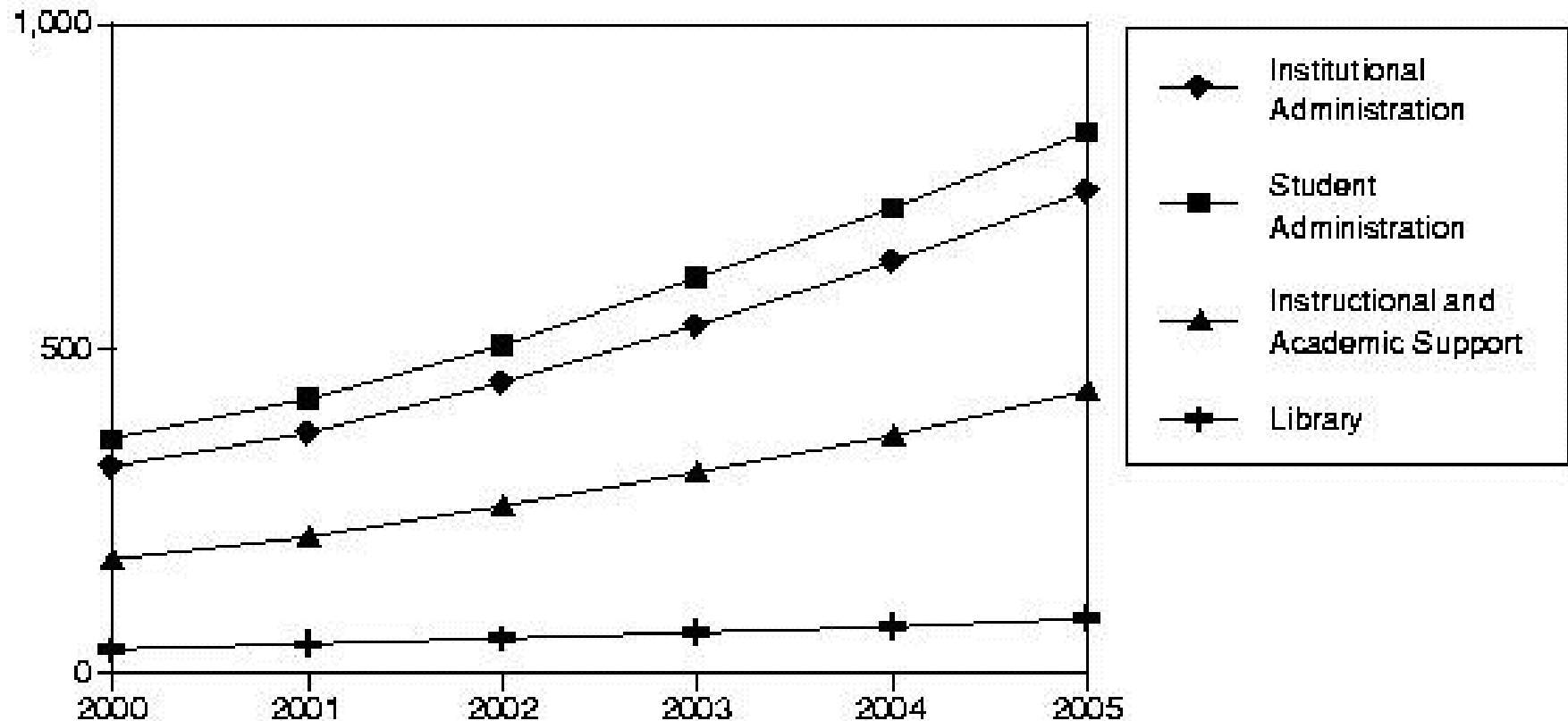
Source: Gartner Dataquest

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Alignment of KDE Business and IT Direction Recommendations

K-12 Education IT Spending by Solutions Area, 2000 Through 2005

Millions of Dollars



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Source: Gartner Dataquest

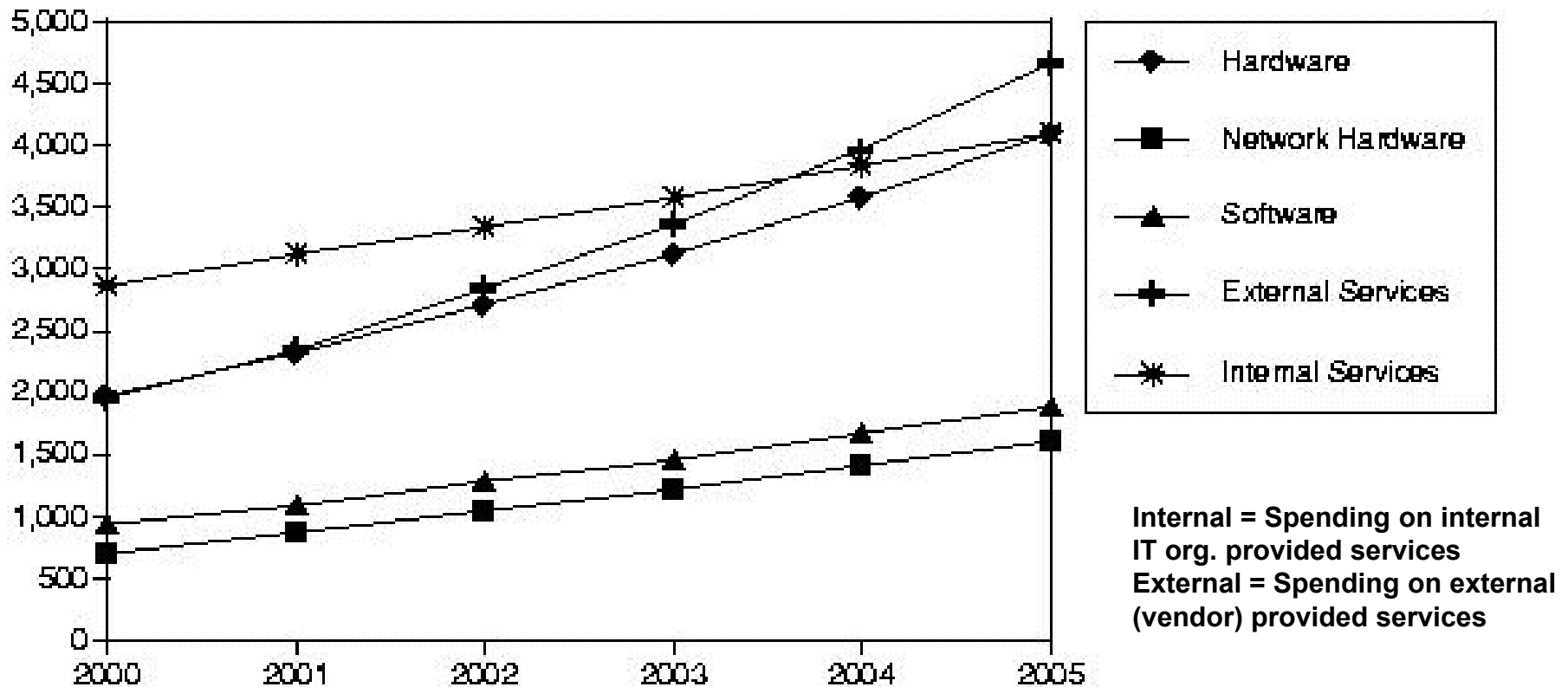
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Alignment of KDE Business and IT Direction Recommendations

K-12 IT Spending by IT Components, 2000 Through 2005

Millions of Dollars



Source: Gartner Dataquest

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Assessment of IT Cost Efficiency

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Assessment of IT Cost Efficiency

There Are Four Alternatives for Achieving IT Cost Savings

Alternative

Actions Needed

Results

1. Deferring Purchases of Hardware and Software

- Not replacing hardware or software as planned by deferring the purchase to future fiscal years.

- Saves expenses in the short term, but may result in higher expenses in the long term

2. Reducing Operational Requirements By Eliminating IT Services

- By reducing the amount of service offered to districts IT support requirements may be marginally lower.

- Will only result in significant short-term IT savings through elimination of significant IT capacity (for example, data center closure).

3. Reducing Cost per Unit of IT Services and Products



- This could occur by re-negotiation of rates or prices for services and products.

- Reduced Cost per Unit of IT services and products only if vendors are willing and able to negotiate

4. Efficiency Improvement of IT Operations



- Through the consolidation or outsourcing of existing resources

- The same level of service can be provided with a more-efficient use of infrastructure and a reduction in the personnel required to support it.



= Opportunities for KDE

Assessment of IT Cost Efficiency

Short-Term Savings Potential of Cost Reducing Alternatives

Savings Alternative \ IT Area Savings Impact	Hardware	Software	Internal Personnel	External Rates
Deferred Purchases	Moderate	Moderate	None	None
Reduced Operational Requirements	Low	Low	Moderate	None*
Reduced Cost/Unit	Low	Low	Low	High
Efficiency Improvement	High	High	High	Moderate

Definitions

- **Hardware:** Impact of savings alternative on reducing hardware costs
- **Software:** Impact of savings alternative on software costs
- **Internal Personnel:** Impact of savings alternative on personnel costs
- **External Rates:** Impact of savings alternative on IT service rates charged by external vendors

* Potential savings from external rates could be moderate if there is significant outsourcing

Assessment of IT Cost Efficiency

OET Has Been Implementing Cost Saving Best Practices

IT Efficiency Best Practices

■ Developing a Centralized Model for Computing Infrastructure

- ❑ Agency units no longer own or operate major portions of their infrastructure.
- ❑ Large-scale computing (mainframes and enterprise servers) are consolidated at the enterprise level (or outsourced) under the CIO or central data center.

■ Consolidate Network Infrastructure and Management

- ❑ Done through consolidation of physical networks or contracts with bandwidth suppliers
- ❑ Capacity is used more efficiently and fewer resources are required to support the network

■ Create a Standard Enterprise Architecture

- ❑ Develop and enforce IT standards
- ❑ Reduces the complexity and expense running the infrastructure and ensure the enterprise interoperability of applications



What OET Has Accomplished

Consolidated Servers Through Windows 2003 Migration

- ❑ Standardizes the state on single server operating system and consolidated server computing infrastructure platform
 - Consolidated 4400 servers to under 400 servers used for Active directory, E-mail and Web Servers.
- ❑ No State has accomplished this and savings run in the millions in the long run

Implemented Centralized Active Directory Services

- ❑ Active Directory allows enterprises to organize their networks into a single, centrally managed structure, and automates many network management tasks.
- ❑ Goal is to improve security, reduce recurring costs and complexity, stabilize backbone services and lay foundation for better collaboration over the network

Developed IT Standards and Enforced By Statute

- ❑ Have IT Standards for Desktops, Servers, Printers Network Equipment, Wiring, Etc.
- ❑ RS 156.160(1) stipulates that the Kentucky Board of Education has a statutory mandate to prescribe IT standards, which school districts shall meet.

Assessment of IT Cost Efficiency

OET Has Been Implementing Cost Saving Best Practices

IT Efficiency Best Practices

■ Standardize & Centralize Enterprise Applications

- ❑ Common systems for e-mail, financial management, and information management save a great deal of money v.s. fragmented approaches
 - The lack of an enterprise strategy for these types of applications often results in costs that spiral upward

- ❑ Centralizing applications can save significant resources in the long term but not short term

■ Implement the Use of Master IT Contracts

- ❑ Organizations reap considerable savings by consolidating contracts for hardware, software and services.
- ❑ Fewer, larger contracts may generate better pricing and economies of scale.
- ❑ There are many advantages to creating a master contract with pre-qualified vendors able to provide services on demand.
- ❑ These contracts ensure that work gets done in a time-sensitive manner without the need for time-consuming, costly procurement processes

What OET Has Accomplished

Standardized and Centralized Major KDE Agency and District Applications

- ❑ No state has successfully standardized statewide applications for education to the extent of KY
 - Statewide Student Information System (STI)
 - Statewide Financial Management System (MUNIS)
 - Statewide d E-mail System (MS Outlook)

- ❑ KDE is potentially saving millions through this strategy

OET has Created Master Vendor Contracts that Districts use for IT Procurement

- ❑ Contracts exist for the following IT components
 - Desktops, Laptops and Printers
 - File Servers
 - Networking Equipment
 - Microsoft Office and Virus Protection Software
- ❑ KDE is potentially saving millions through this strategy

Assessment of IT Cost Efficiency

OET Has Been Implementing Cost Saving Best Practices

IT Efficiency Best Practices

■ Desktop Computing

- Short term savings for desktop computing is largely limited to postponing purchases
- Long term savings from desktop costs can be significant and all enterprises should empower the CIOs to set desktop standards for hardware, software, training and the help desk.
- The enterprise should commit to no more than two or three desktop platforms (one is ideal), one standard for laptops, one office software suite.
- The financial advantages include:
 - **Economies of scale on procurement:** Larger volumes enable great price discounts
 - **Training:** With fewer platforms there are fewer products on which to be trained. More importantly, as people transfer from one part of the organization to another no loss in productivity due to lack of training
 - **Help desk support:** Fewer products to support will reduce the complexity of the help desk environment. It also enables an enterprise help desk consolidation that will provide consistent, universal service to all agencies in the organization

What OET Has Accomplished



Standard for Procurement of Statewide Education Desktop Computing

- Master contract defined the standards for procuring new computers
- Savings are potentially high

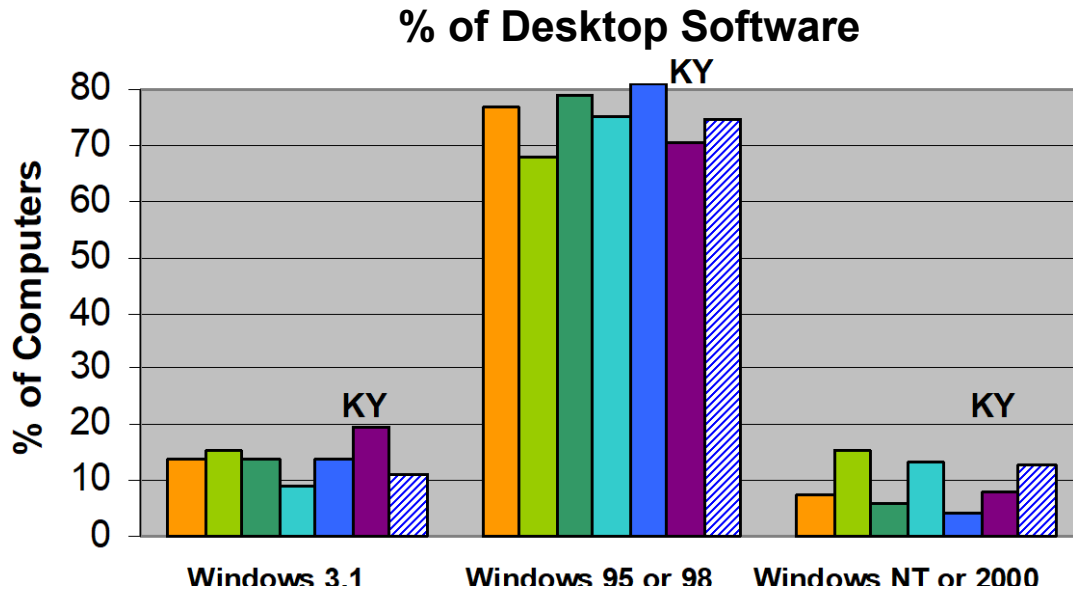


Cost efficiently is currently greatly reduced by having no minimum standards for already deployed desktops and other infrastructure components

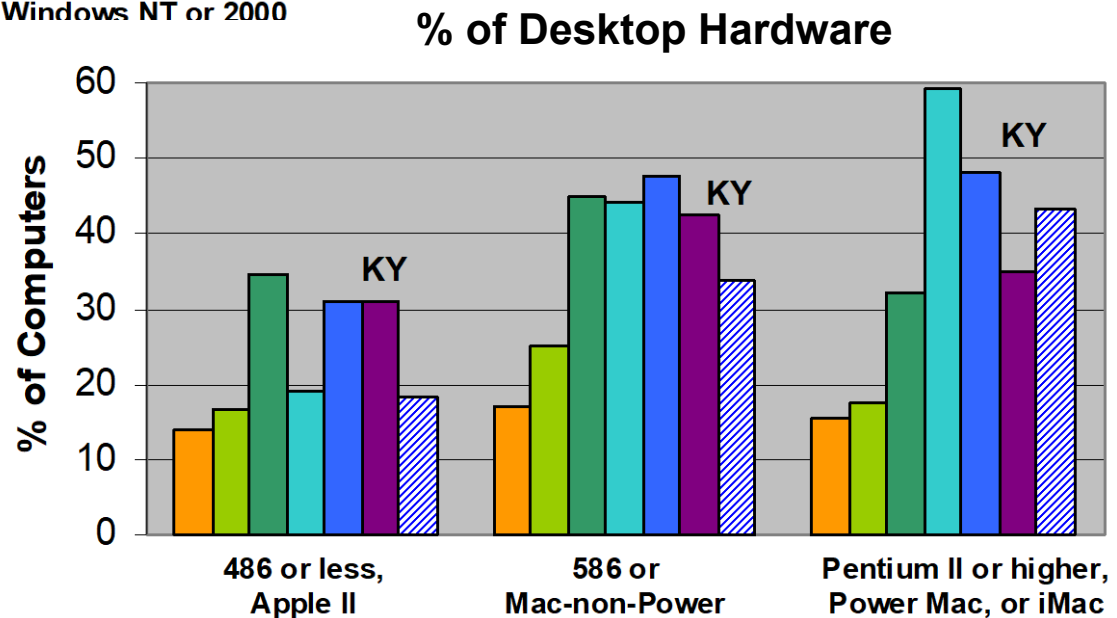
- Minimum standards stipulate the minimum configuration of desktops deployed
- With no minimum standard, older outdated desktop hardware and software are allowed to proliferate
- KY has very many versions of computing platforms (Win 3.1, Win 95, 98, Win NT, Win 2000), as a result KY is ranked very low* in the US in terms of the quality of its desktop computing infrastructure
- This has occurred due to a lack of technology refresh and deferred purchases that save on the short term but is inefficient in the long term.

Assessment of IT Cost Efficiency

Outdated Desktop Computing Infrastructure



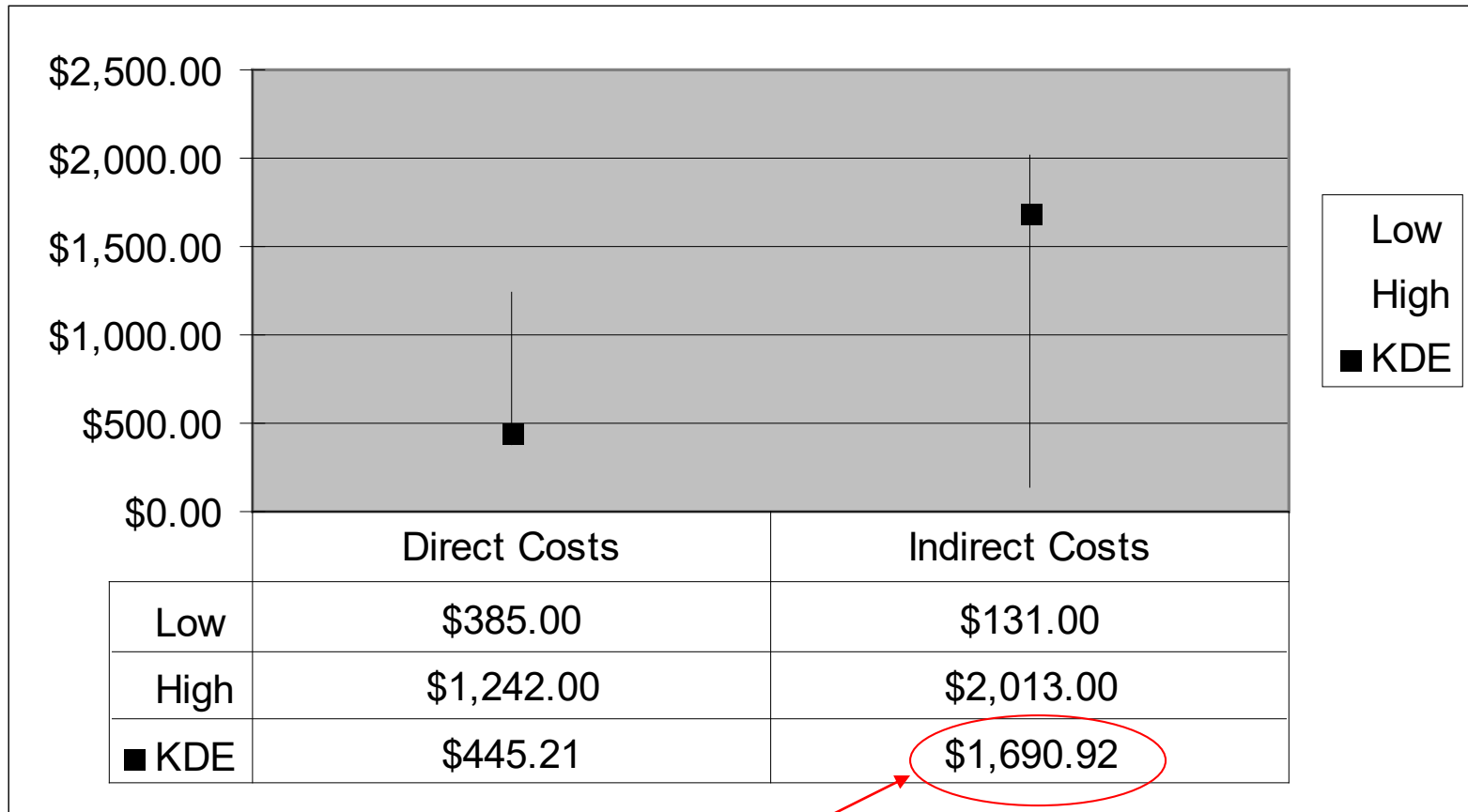
Source: Education Week Magazine, "Technical Survey 2003"



Assessment of IT Cost Efficiency

Total KDE IT Spending Per Device Compared to Peers

- **OET's spending is lower on direct IT costs which correspondingly increases indirect costs (soft costs):** Low direct spending on IT means that costs have to be compensated elsewhere resulting in very high indirect IT spending (spending by parties other than OET e.g., schools)

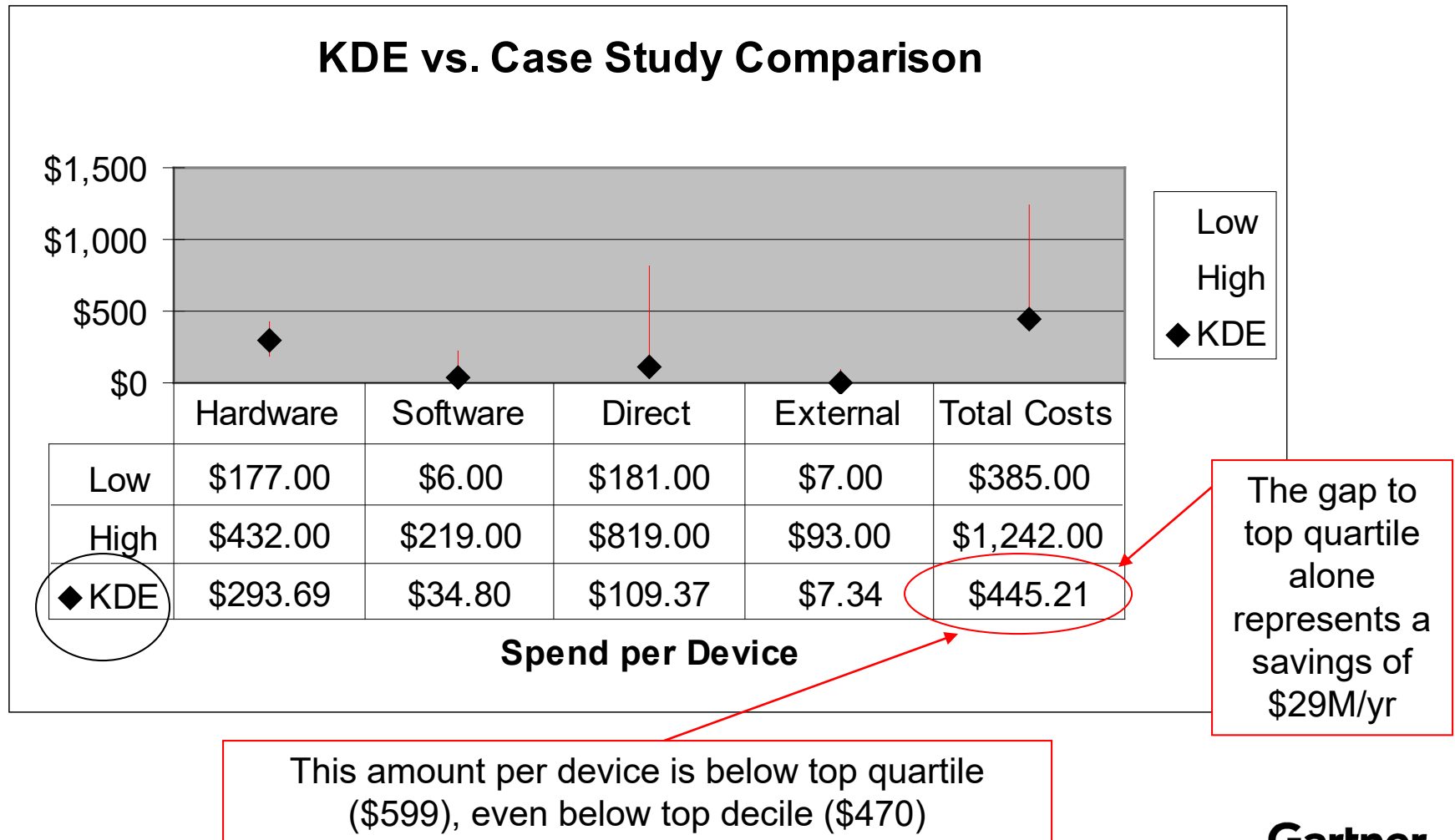


This amount per device translates to \$338M for KDE (total)

Assessment of IT Cost Efficiency

Total KDE IT Spending Compared to Low and High Peers

- KDE's (and OET's) IT spend is lower in all areas of direct spend, especially acute in staffing which is partially due to shared services efficiencies (unusual for K-12) and understaffing (not unusual for K-12)



Assessment of IT Cost Efficiency

Observations: Total Cost by Technical Area

■ OET Continues to Operate at a Higher Efficiency Level than Peer Organizations in Most IT Service Areas

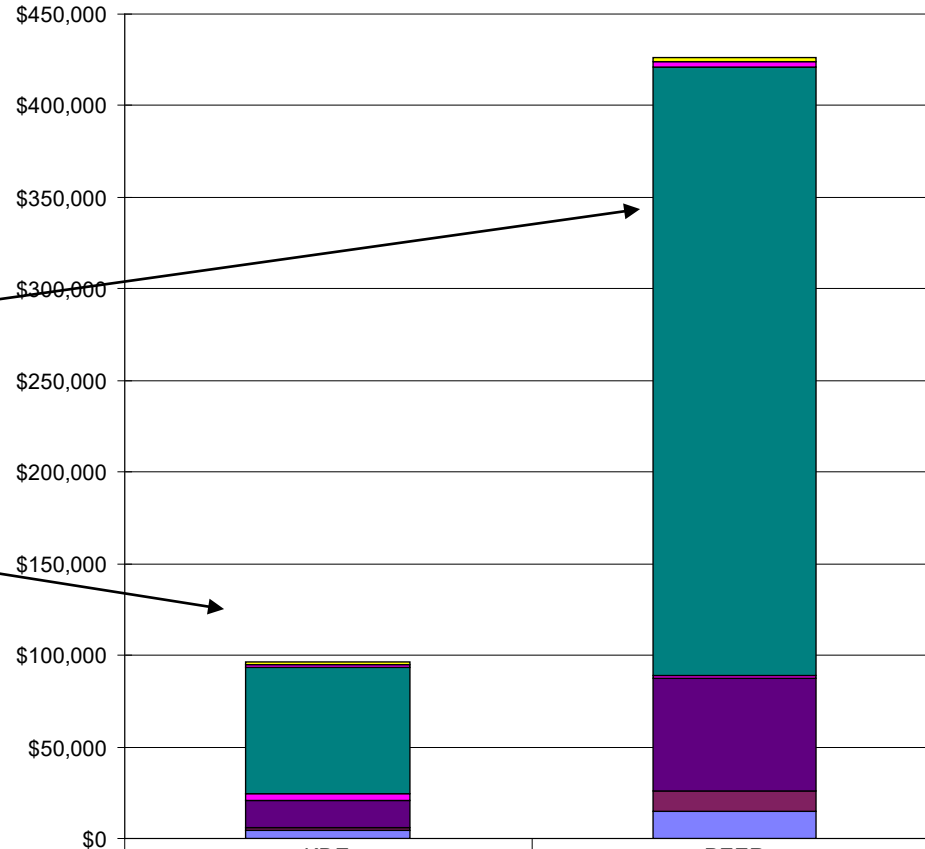
- The aggregate IT Consensus Model cost for KDE for those service areas included in the study (at \$95M versus \$426M) are \$331M (or 78%) lower than what the composite peer group would spend to perform KDE's workload.
- For the services measured, at the summary level, OET outperforms the efficiency of the selected composite peer groups in the following areas:
 - Midrange NT 72%
 - Midrange Unix 85%
 - Distributed 79%*
 - Applications Development 35%
 - Applications Support 40%
 - Wide Area Data 75%
- OET incurs costs that are higher than the selected composite peer groups in the following areas (however beginning July 2004, costs will be similar to peer groups):
 - IT Help Desk 10%

* - normalized to devices not users

Assessment of IT Cost Efficiency

Observations: Total Cost by Technical Area

As mentioned previously, OET's costs are less than one quarter those of the selected peers...



	KDE	PEER
Applications Development	\$1,438	\$2,205
Applications Support	\$1,713	\$2,872
Distributed Computing	\$68,908	\$332,023
IT Help Desk	\$3,311	\$1,939
Wide Area Data	\$14,956	\$61,015
Midrange-UNIX	\$1,712	\$11,096
Midrange-NT	\$4,289	\$15,120

Assessment of IT Cost Efficiency

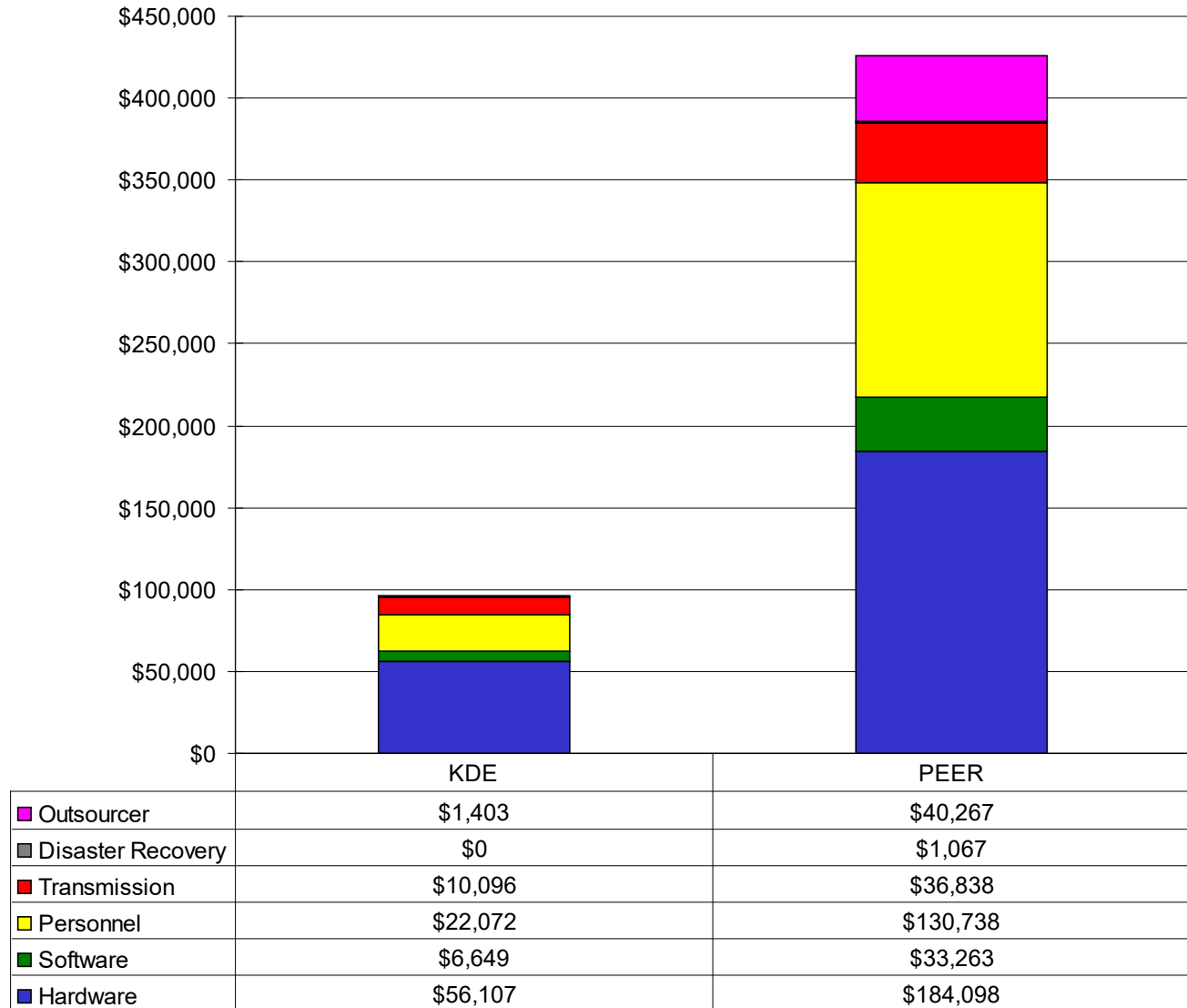
Observations: Total Cost by IS Cost Category

■ OET is spending less than the peer groups would need to spend in the following areas:

□ Personnel	70%
□ Hardware	80%
□ Software	84%
□ Outsourcer	97%
□ Transmission	73%
□ Disaster Recovery	100%

Assessment of IT Cost Efficiency

Observations: Total Cost by IS Cost Category



Assessment of IT Cost Efficiency

Observations: Total FTEs By Area

- Total Full Time Equivalent (FTE) personnel within the IT areas measured is 85% lower than Peer Group Full Time Equivalent staff that would be required to support OET's workload.

	OET & School Districts	PEER
□ Total FTEs	429.2	1778.5

- The following functional areas have imputed FTE counts that are higher than what the peer group would need to perform OET's workload:

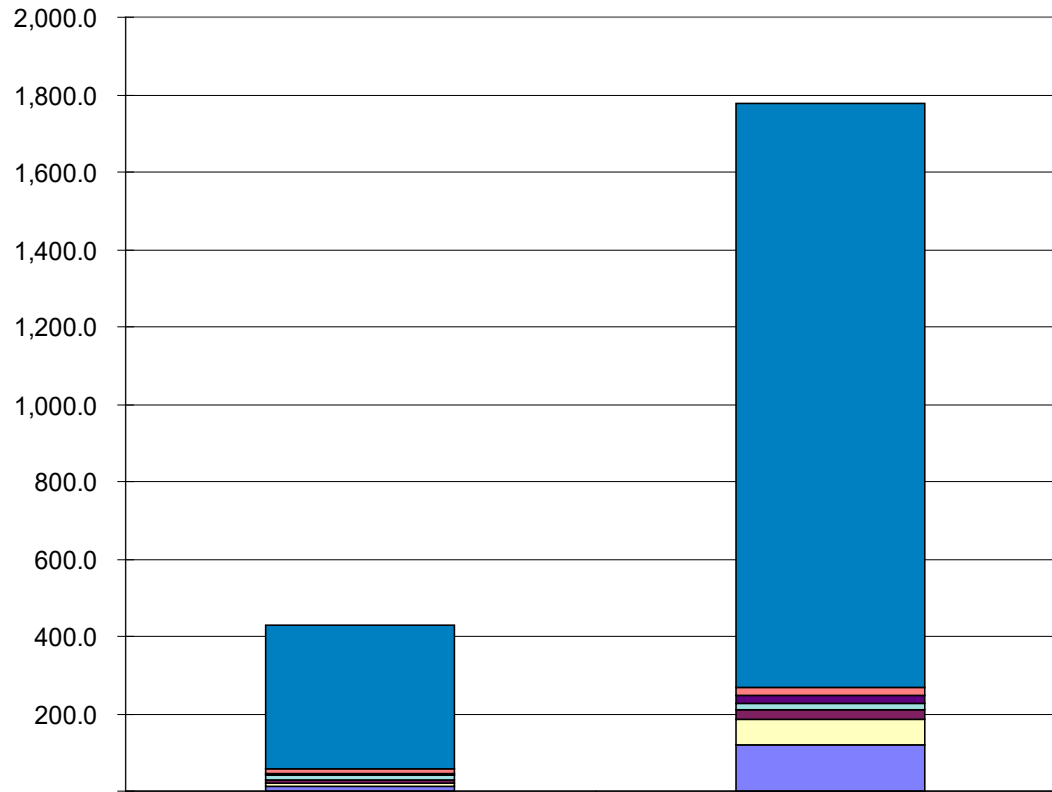
- IT Help Desk 10% higher

- The above analysis is based on Fiscal Year (FY) 03-04 costs of \$595K for the Munis Help Desk. This cost will reduce to \$188K in FY 04-05.

- The cost per staff is similar to that of the peer (+/- 5%)

Assessment of IT Cost Efficiency

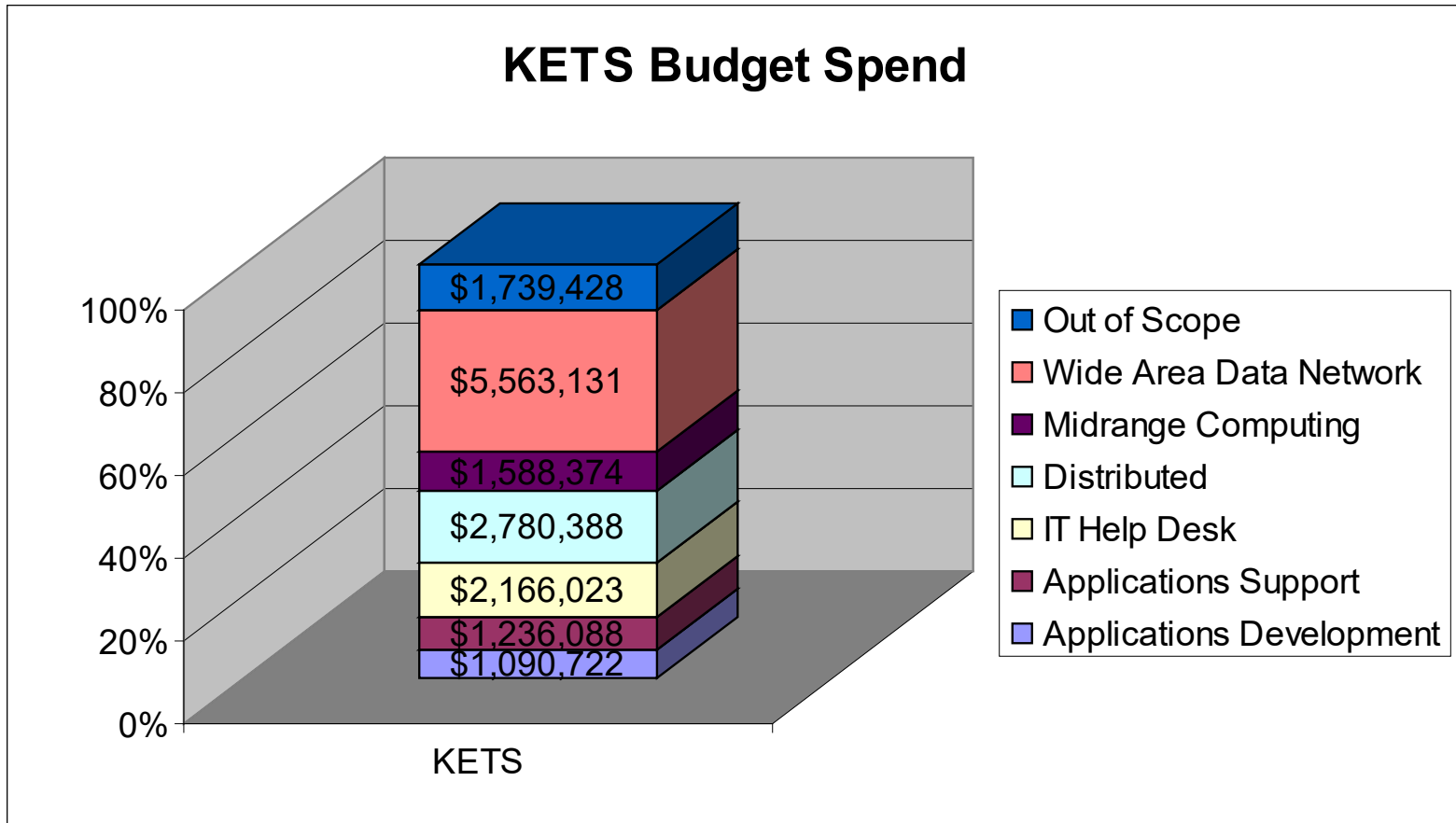
Observations: Total FTEs By Area



	KDE	PEER
■ Distributed Computing	371.4	1509.50
■ IT Help Desk	10.8	20.77
■ Applications Support	6.8	20.21
■ Applications Development	12.2	15.91
■ Midrange - UNIX	5.6	27.13
■ Midrange - NT	10.3	66.38
■ Wide Area Data	12.2	118.62

Assessment of IT Cost Efficiency

Observations: IT Spending Areas as a % of OET Budget



■ Observations

- Existing OET budget is fully accounted for in tower spend and out of scope technology items (telecommunications, audio.visual and one-time projects), Total is **\$16.1 M** out of 16.5M. Remaining amount (less than \$400K) is non-technology costs (administrative costs and other elements) not included in any Gartner consensus model.

Assessment of IT Cost Efficiency

Recommendations

- **Conduct a Formal Review of all IT Projects Over \$250,000 (or Other Determined Size)**
 - What projects are considered high priority?
 - Are the projects generating business value, or have business requirements changed?
 - Considering tangible deliverables and resources consumed, is the project worth continuing?
 - What are the short and long term impacts of aggressively canceling or putting projects on hold?
- **Continue Infrastructure Consolidation**
 - Continue efforts to consolidate and centralize base level utility elements of the IT infrastructure that can be provided more efficiently through centralization and shared services
 - Formalize an enterprise IT architecture in order to reduce and develop an IT Infrastructure Refresh Strategy
- **Further Develop an IT Sourcing Strategy for Shared Services**



Assessment of IT Operational Effectiveness

- IT Governance
- IT Program Management
- IT Service Delivery Model
- IT Investment Management
- IT Vendor Management



IT Governance

consulting

Kentucky Department of Education
IT Assessment and Optimization Project Final Report
Engagement: 220604280 May 2004

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IT Governance

What is IT Governance?

- **IT governance involves decision-making authority and accountability mechanisms within an organization that encourage the best management of IT**
- **The categories of governance include:**
 - IT Decision Domains: (“What” IT decisions need to made)
 - Decision Authority: (“Who” has decision right and input rights?)
 - Structures and Processes (“How” are decisions made)
- **IT governance provides a framework in which the decisions made about IT issues are aligned with the overall business strategy and culture of the enterprise.**
- **Governance is about decision making not about how the actions resulting from decisions are executed.**
 - Governance is concerned with setting directions, establishing standards and principles, and prioritizing investments

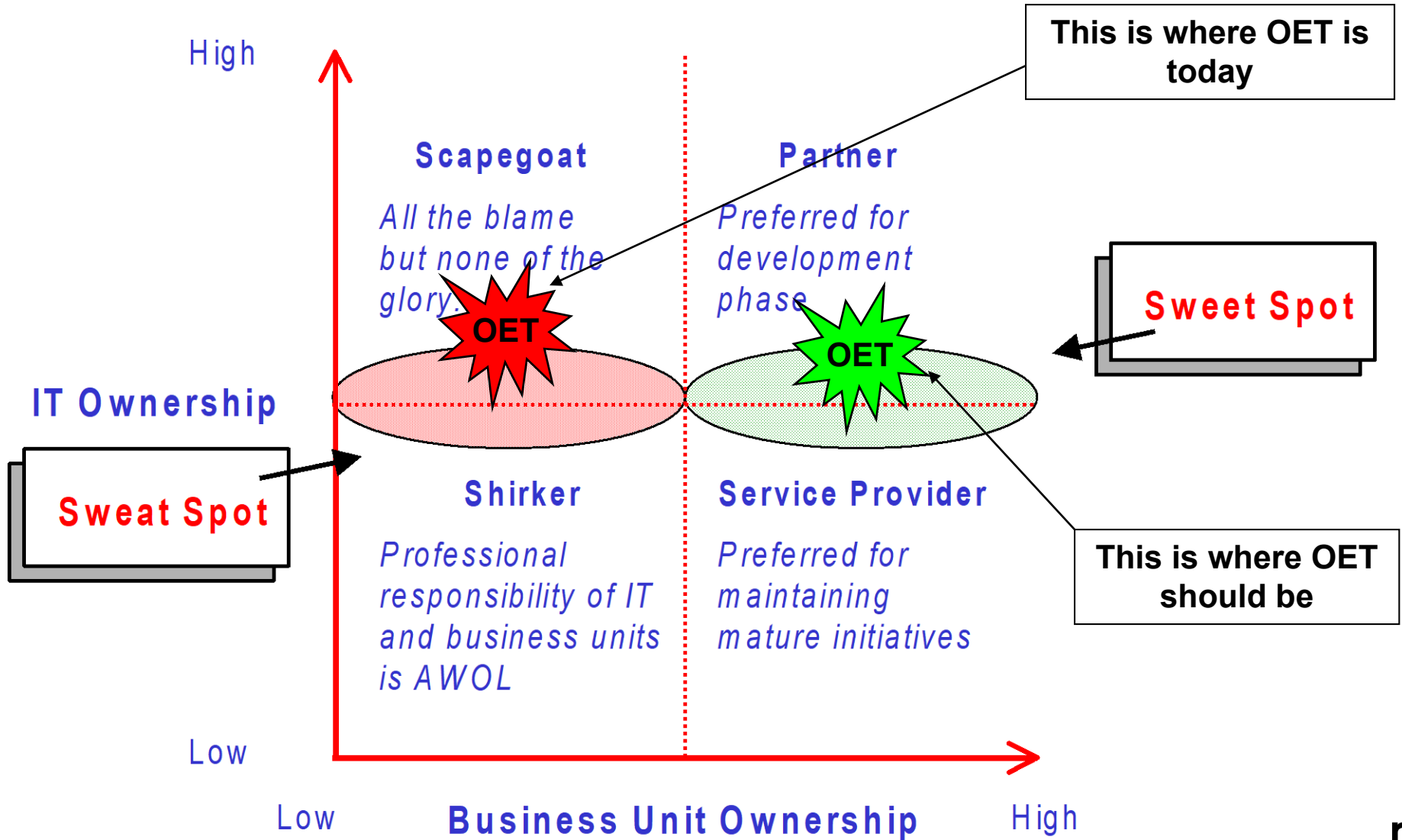
IT Governance

Findings and Observations

- **As is typical of maturing IT organizations, OET has varying levels of credibility with its key customers and stakeholders**
 - OET can be Assessed as a Three-tiered IT Service Organization:
 - **Tier 1:** A shared service organization providing shared IT services to school districts.
 - **Tier 2:** A centralized IT organization providing services to the KDE agency
 - **Tier 3:** A policy organization responsible for setting and monitoring educational technology policy for the State of Kentucky.
 - Credibility (ability to meet stakeholder expectations) is higher where more resources and management attention has been provided.
 - OET credibility is higher with school district stakeholders
 - OET credibility is lower with KDE agency stakeholders
 - OET credibility with IT education policy stakeholders is unclear
 - The roles and responsibilities of OET in managing these three areas do not meet stakeholder expectations, i.e. attention is given to some areas while other areas are potentially overlooked.
 - For the most part, responsibility for IT governance and IT projects has shifted to OET, with limited KDE agency business unit participation.
 - IT governance mechanisms do not ensure KDE agency business owner accountability for IT projects.

IT Governance Findings and Observations

Why Does OET have Lower Credibility With KDE Business Units?



IT Governance

Findings and Observations

- **Undefined IT Governance:** Current IT governance is not clearly defined. Decision making processes are embedded within the overall KDE business governance model.
 - IT governance is insufficiently distinguishable from overall KDE business governance resulting in limited clarity in IT performance monitoring and decision making.
- **Varying Levels of Governance Effectiveness:**
 - IT governance has been more successful for shared services to school districts due to availability of resources and management focus.
 - OET has developed good relationships with shared services customers at the district level. This has enabled OET to resolve issues faster and implement its initiatives while effectively addressing conflicting needs.
 - » Clear development of technology focused school district committees and representation.
 - » Committees provide for a governance structure for IT shared services recipients - meets on a regular basis,i.e., Statewide Kentucky Association of Technical Coordinators and regional chapters
 - IT governance has been less successful for centralized services provided to the internal KDE agency
 - While acknowledging the technical successes of OET, with relatively few technical infrastructure issues, OET is viewed skeptically (which is not unusual for centralized IT services) from a KDE business units standpoint in terms of delivering value and meeting planned expectations, responsiveness, customer service, decision flexibility and communication.

IT Governance

Findings and Observations

- **Good Infrastructure Standards:** OET has also been successful in prescribing standards for technical infrastructure and applications.
 - Success has been due to:
 - Mandated legislation giving OET the authority to define and enforce these standards
 - Funding mechanisms that ensure compliance with state standards. Using KETS funds requires that districts follow established standards
 - Good effort in creating relationships and buy-in for the standards to develop and clear understanding of usefulness of the IT shared services
 - Success is limited in technology refresh.
 - Resulting in more heterogeneous technical environment that is costly to maintain
- **Perceived Limitations in Ongoing Communications:** Communications remains one of the universal pain points articulated by stakeholders. Stakeholders feel that they should have more information and input before IT decisions are made

IT Governance

Findings and Observations

■ Project Governance is not Appropriately Exercised and Has Limited Effectiveness.

- For the most part each major IT enabled project in KDE does not have a defined governance structure accountable for project success (this is somewhat in place through advisory committees such as the data policy board for the Max project (data policy also regulates other projects). *** Note that most IT projects are actually business transformation projects with IT components**
 - Currently key project decisions remain with OET, which result in limited participation of project business owners in KDE and perceived lack of KDE business owner influence over the project
 - » Major projects, e.g., those over \$ 250,000, should typically have a project steering committee consisting of executive level stakeholders responsible for the success of the project
 - » The KDE project manager is directly accountable to this committee which would meet regularly to discuss the progress and accomplishments of the project in terms of scope, budget and schedule.
- There is an inherent conflict of interest when the service provider, in this case OET, is also the de facto governance authority for the project.
 - This arrangement does not leverage KDE's collective authority and decision making process to support IT projects
 - This may have occurred due to the KDE business unit abdicating responsibility to IT. And IT may find it convenient to manage project themselves.

IT Governance: Findings and Observations

Assessing KDE's IT Governance Effectiveness

IT governance effectiveness indicators	Done poorly/not at all (score 0)	Done somewhat poorly (score 1)	Done somewhat well (score 2)	Done well/completely (score 3)
1. There is thoughtful variation among the decision styles used for different IT domains		1		
2. High level of business executive involvement in IT governance			2	
3. Business executives can accurately describe IT governance		1		
4. Formal executive committees and communications underpin IT governance arrangements		1		
5. IT governance is all encompassing and transparent, formal exception processes are in place	0			
6. Serious tracking of IT's business value, projects and resources consumed is undertaken		1		

Scoring of the indicators is as follows:

0-4 (No effective IT governance) 5-9 (Low-level IT governance)

10-14 (Maturing IT governance) 15-18 (Top performer, watch for complacency)

TOTAL **6**

IT Governance: Findings and Observations

Assessing KDE's IT Governance Effectiveness

1. Variation Among the Decision and Input Styles Used for Different IT Domains is Currently Informal

- While KDE executive level decision rights for IT are appropriately handled through the current business governance model, input rights are currently restricted by the informal nature of the IT governance process.

2. Good Level of Involvement of KDE Business Executives in IT Governance

- The level of KDE business executive involvement in IT governance occurs on a more informal, relationship oriented process. The level of involvement is based upon the proactiveness of business executives not by formalized processes.
- The only formalized process is final approval of IT budget and high level strategies (e.g., master plan approval) at the KDE Board level.

3. Ability of KDE Business Executives to Accurately Describe IT Governance is Mixed

- Due to the lack of clarity on IT governance, KDE business executives acknowledge that decision processes regarding IT are more intuitive than formalized.
- IT governance is described as more of an ad hoc process rather than conducted in a well-defined manner.

IT Governance: Findings and Observations

Assessing KDE's IT Governance Effectiveness

4. Limited Development of Formal Executive Committees and Communications that Underpin IT Governance Arrangements

- ❑ Strategic high-level IT governance is established and formalized, i.e., the KDE Board of Education makes final decisions regarding overall IT strategies and budget.
- ❑ However, the underlying IT governance process is undefined and is mostly based on semi-formal or informal governance relationships between decision makers.
- ❑ There are some standing committees but they do not have clear charters, e.g., KDE's associate clearinghouse and data policy committee.
- ❑ Some major IT projects may have an advisory committee for input and collaborative reasons, but these are not set up as formalized project governing bodies that monitor the progress of the project throughout its lifecycle.
- ❑ While school district-level committees have been established to provide input for shared IT services, there is an opportunity to refine the current IT governance model to provide school districts with more formal channels to provide input on IT standards and strategic IT directions. E.g., through a technical standards committee.

IT Governance: Findings and Observations

Assessing KDE's IT Governance Effectiveness

5. Establishment of Clear and Formal Exception Processes Underdeveloped

- With an undefined IT governance structure, planning and budget exceptions are dealt with on an as-needed basis.
 - Ad hoc meetings with the Board are set up to deal with matters that require Board input/approval
E.g., funding for projects outside the annual budget process.
- Exception processes are more formalized when agency divisions or school districts want to purchase non-standard equipment. This is through a waiver process set up by OET.

6. Tracking of IT Business Value, Projects and Resources Consumed is Informal and Inconsistent

- While the business value for projects is present, this is often difficult to measure beyond anecdotal evidence for most projects, e.g., the cost advantages of the development of common IT infrastructure exist but quantitative measurements are not consistently done.
- Based on interviews and review of materials, the objective tracking of projects, deliverables, milestones and benefits against resources consumed is informal and inconsistent.
 - For example, in the case of the school nutrition application project and the Max project, stakeholders both at the agency and school district are generally uninformed or unhappy regarding progress and use of resources for these two projects.

IT Governance Recommendations

1. Institute an Well Defined IT Governance Structure

- Bridge Gap Between KDE Business and IT Management and Operations
 - A formal IT governance structure will provide the process and appropriate forums where KDE business and IT functions can work together and where consistent interaction and communications can occur
- Increase the Ownership of IT by KDE Business Units/Owners
 - An IT governance structure will encourage more business ownership of IT projects by shifting the accountability for IT projects away from OET to the KDE business units
- Develop Clearly Distinguishable IT Governance Structure and Processes that Adequately Address, Strategic, Operational and Technical Levels of IT Governance
- Align Decision Rights and Input Rights of IT Stakeholders to be More Effective
 - Input and decision rights should be established in a more federated manner, i.e., more involvement from stakeholders from KDE business units and school districts in IT decision making process.
 - The near-term strategy for IT governance structure should ensure that agency business leaders have the proper mechanisms to provide input in IT development and strategic directions
 - These input rights communicate the enterprisewide priorities for IT that must be deployed by the central OET organization. Building business involvement is important since it provides insights into required improvements for broader application of centralized and enterprise-wide IT services
 - Research suggests that decision rights should remain focused, rather than distributed, to concentrate on the service quality improvements required to support the organization

IT Governance Recommendations

2. Develop a Formal and Regular Communications Process with School Districts

- The use of KETS engineers as business relationship managers greatly enhances communication
- Other regular communication mechanisms such as e-mail bulletins and newsletters would enhance the communication of general IT matters that affect all stakeholders and keep them informed of the status IT initiatives and directions.
 - These communications also foster a greater sense of working within a shared services community in which the interests of the school districts and the KDE agency are seen to be tied together

3. Develop a Robust IT Project Governance Structure

- KDE should develop an IT project governance structure that assigns appropriate governance rigor to each IT projects based on predefined criteria
- Each major project should have direct accountability to its stakeholders through a steering committee with well-defined decision rights and escalation procedures.
 - E.g., all projects over XX dollars should have a project steering committee that monitors project progress on a monthly basis. Key measurements include earned value, schedule, budget and scope conformance

IT Governance: Recommendations

High Performers Deploy Formal Communications

- **Top Communication Methods in Order of Effectiveness***
 - Senior management announcements
 - Formal committees
 - Office of CIO and/or IT governance
 - Working with managers who don't follow rules
 - Documented processes
 - Portals/Intranets
- **Informal meetings with colleagues were much less effective**
- **The strongest predictor of successful governance was found to be the percentage of senior managers who can accurately describe their enterprise IT governance arrangements**

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*Statistically significant relationship to governance performance

IT Governance: Recommendations

Three Critical Components of KDE IT Governance Structure

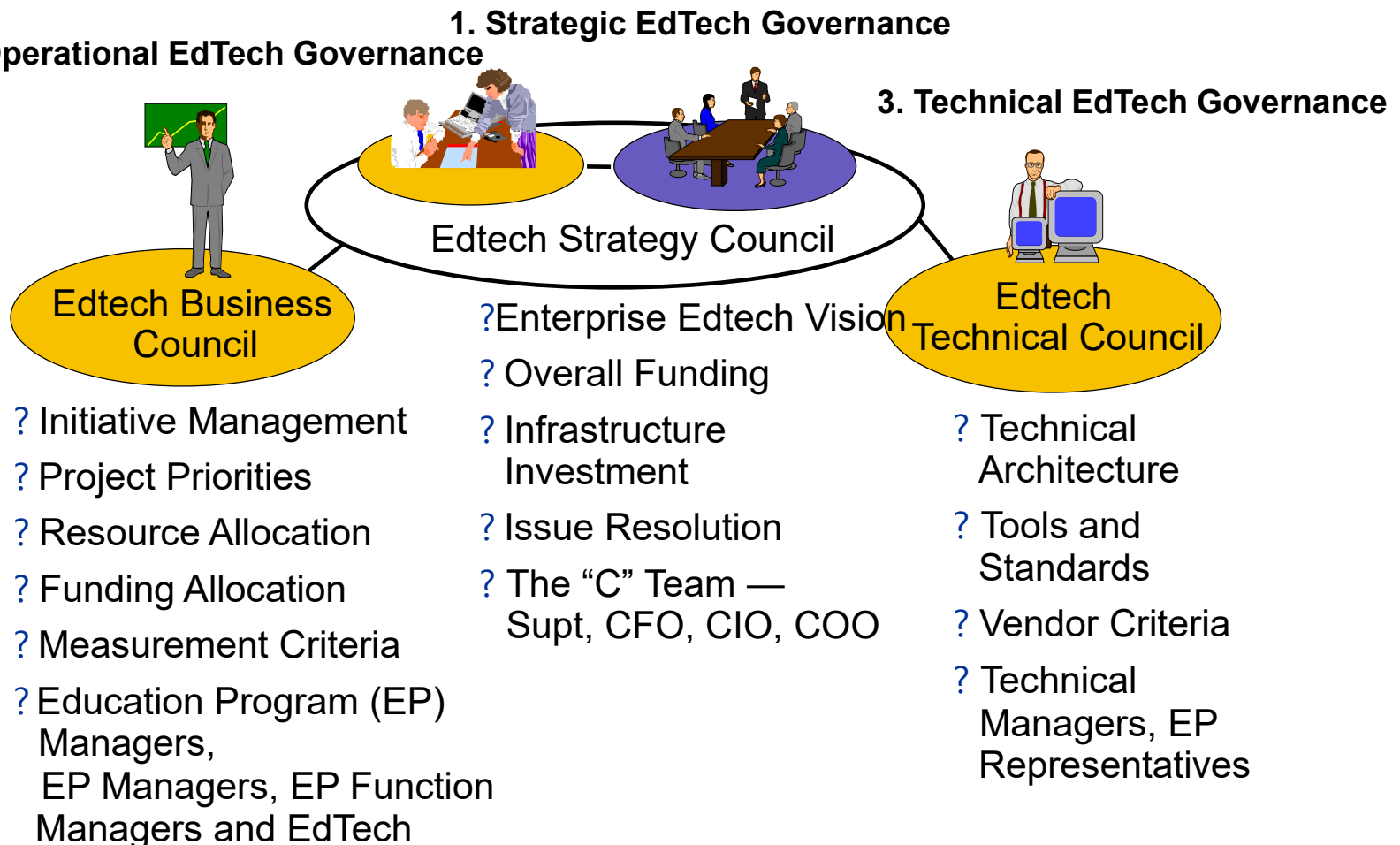
IT Governance Must Cover Three Critical Areas in Order to Be Successful:

- 1. Strategic IT Governance:** Consists of an executive strategy group comprised of the enterprise's chief officers whose role is to articulate business objectives in an actionable way and to enforce the enterprise IT architecture and strategic directions
 - This council looks at strategy and policy, prioritizes initiatives, and aggregates/vets funding issues at the enterprise level
- 2. Operational IT Governance:** Consists of a business focused group comprised of senior business unit leaders and the CIO with portfolio management responsibilities. This group recommends priorities, oversees projects, and measures success across business units
 - Its role is to establish the portfolio of projects that are most likely to support business strategy, to determine how IT resources will be allocated across those projects, to ensure projects comply with their stated business case and to reconcile competing demands for IS resources
- 3. Technical Governance:** Consists of a technically focused group that develops guidelines and principles for technology standards and practices
 - It is comprised of the CIO, the enterprise architecture team and the team's advisors. Its purpose is to design and maintain a robust IT architecture that explicitly enables business strategy.

Education Technology Governance: Recommendations

Three Critical Components of Governance Structure

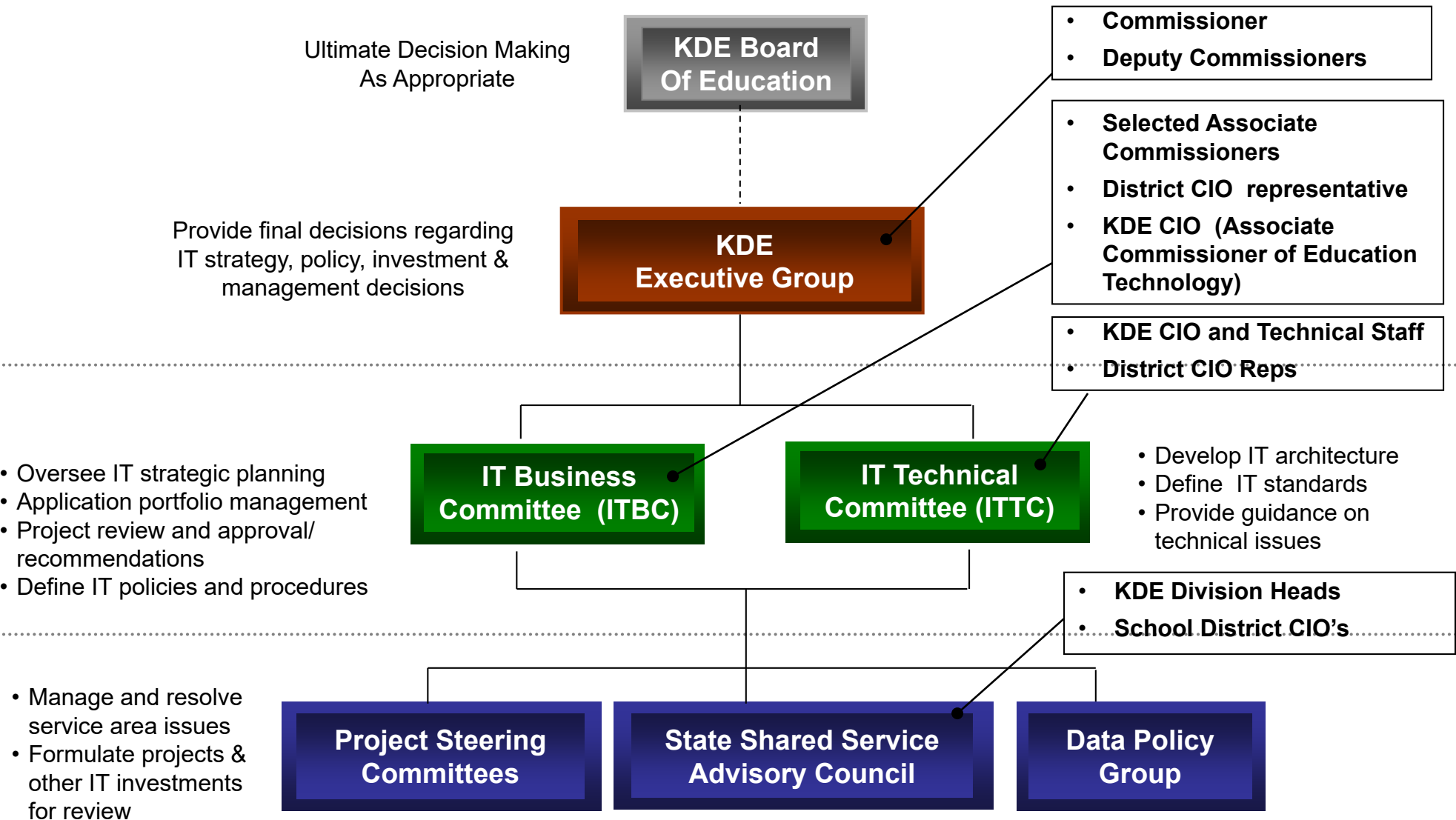
- Illustrated below is a best practice education technology (EdTech) governance framework.



Source Gartner 2004

IT Governance: Recommendations

Possible KDE IT Governance Structure



IT Governance: Recommendations

IT Governance Committees Charter, Scope & Membership

KDE Executive Group

- **Goal:** Ensure the alignment and integration of IT strategies with KDE business objectives, and provide adequate funding and commitment to enterprise-wide IT initiatives and infrastructure.
- **Role:** Strategic decision-making and advisory to Board of Education
- **Scope:**
 - ❑ Define KDE enterprise IT strategic vision
 - ❑ Oversee comprehensive IT program to support KDE business strategies
 - ❑ Oversee System-wide IT investments
 - ❑ Final approval of IT standards, policies, and procedures
 - ❑ Final review and recommendation on major IT projects and investments for Shared Services
 - ❑ Resolve escalated IT issues
- **Membership:**
 - ❑ Commissioner
 - ❑ Two Deputy Commissioners

IT Business Committee (ITBC)

- **Goal:** Ensure IT initiatives are business-driven and that planned IT changes are successfully implemented within the business. Ensure that resource and priority conflicts are resolved with minimum business disruption.
- **Role:** Decision-making and advisory to KDE Executive Group
- **Scope:**
 - ❑ Oversee detailed IT strategic planning and implementation
 - ❑ Oversee KDE IT asset portfolio
 - ❑ Recommend **ALL** IT projects and initiatives for approval through a business case process
 - ❑ Oversee the implementation of approved initiatives -- assign to project steering committees the management of individual projects (including implementation of bundled smaller changes and enhancements).
- **Membership:**
 - ❑ Selected Associate Commissioners, including OET CIO
 - ❑ Selected District CIO

IT Governance: Recommendations

IT Governance Committees Charter, Scope & Membership

IT Technical Committee (ITTC)

- **Goal:** Ensure technical interoperability among all KY education system organization areas including admin, student and third-party vendor environments to support shared IT services such as sharing of data and transactional capabilities and the efficient operation of cross-functional and cross-organizational business processes.
- **Role:** Decision-making and input to KDE Executive Group
- **Scope:**
 - Oversee the implementation of a Technical Architecture
 - Define and ensure compliance with technical standards, policies & procedures
 - Serve as a resource for technology review and provide technical input/support for other governance bodies, IT programs & projects
- **Membership:**
 - OET CIO and selected technical staff
 - School CIOs and selected technical staff

Shared Services Advisory Council (SSAC)

- **Goal:** Provide a forum for information sharing, communications, including discussion/resolution of pertinent **shared service** issues and needs that impact, or are impacted by, IT initiatives and existing systems.
 - Ensure that IT strategic, technical, and operational issues pertinent to shared services are resolved and that KDE agency school districts are able to provide input on strategic and operational IT priorities and decisions.
- **Role:** Input and recommendations to IT Business and Technical Committees
- **Scope:**
 - Resolve enterprise-wide, strategic and operational shared service issues
 - Provide relevant input for the prioritization and allocation of resources for shared service strategic and operational activities
- **Membership:**
 - KDE Agency Representative
 - School District Representatives

IT Governance: Recommendations

IT Governance Committees Charter, Scope & Membership

Project Steering Committees

- **Goal:** Ensure direct accountability and responsibility for the success of specific IT projects by business and IT stakeholders
- **Role:** Provide direct oversight over each IT project that meets certain predefined criteria (e.g., over \$250,000)
- **Scope:**
 - Review project status and issues presented by the project manager to the committee
 - Provide decision-making on critical project issues as they pertain to project scope, schedule, budget, methodology and resources
 - Review and ensure project documentation is complete and communicated, for example, project charter, project schedule, project budget, requirements, testing, and others.
- **Membership:**
 - Chaired by the project's business sponsor
 - Key management level business & technical project stakeholders
 - OET's PMO Representative

Data Policy Group

- **Goal:** Provide a forum for information sharing, communications, including discussion/resolution of pertinent data policy issues and needs that impact, or are impacted by IT initiatives and existing systems.
- **Role:** Input and recommendations to IT Business and Technical Committees
- **Scope:**
 - Set data policy standards
 - Resolve enterprise-wide, strategic and operational data policy issues
- **Membership:**
 - KDE Agency Representatives
 - School District Representatives

IT Governance

Critical Success Factors For Implementation

1. Actively Design IT Governance

- ❑ KDE's IT governance must be thoughtfully and actively designed. Executive management must be involved for it to be effective.

2. Build in Transparency

- ❑ Ensure all IT issues are resolved within the IT governance framework. Without transparency, there is not trust. Transparency must be built into IT governance so that there is confidence in the processes.

3. Know When to Redesign

- ❑ KDE should acknowledge that changing IT governance can take many months. KDE should make changes to its new governance structure only when desirable behaviors change markedly.

4. Educate KDE and School District Managers About why Governance is Important

- ❑ This is a constant challenge and requirement, good behaviors must be reinforced and inappropriate behaviors redirected.

5. Initially Focus on a Small Number of Goals, Behaviors, and Metrics

- ❑ A sharp focus on a limited number of goals, behaviors and metrics is necessary for implementation success.

6. Have Clear Exception Handling Processes

- ❑ There must be clear exception handling processes, with transparent and rapid escalation processes. Exceptions are how enterprises learn.



IT Program Management

consulting

Kentucky Department of Education
IT Assessment and Optimization Project Final Report
Engagement: 220604280 May 2004

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IT Program Management

Findings and Observations

- **OET has been successful in completing complex IT infrastructure projects as evidenced by its implementation of a shared service infrastructure for networks and hardware.**
- **IT is viewed as leading rather than supporting “IT projects” which are in effect business transformation projects.**
 - Projects that involve extensive interactions between business and IT resources are currently viewed as less successful
 - Key project management processes that are in need of further development are those that fully integrate the role of business stakeholders into IT project management and governance.
- **As OET has transitioned from an infrastructure development organization into a shared IT service organization there has been increased competition for resources to support ongoing services as opposed to working on large one time projects.**
- **KDE has not yet fully developed an established set of consistent methods, processes and skills that internalize project management throughout the organization.**
- **Improvement in communication is universally cited as one key area for improvement for OET.**

IT Program Management Findings and Observations

■ Preliminary Project Management Findings

- ❑ **Business Sponsorship Process:** Not every project has a clear KDE business sponsor who is directly accountable for a project and who is fully aware of the status of the project in respect to scope, budget and schedule.
- ❑ **Business Case/Project Justification Process:** KDE lacks an enterprise level step by step justification of IT projects that involves business and IT stakeholders that begins at project inception and ends with final scope, schedule and budget approval.
- ❑ **Project Oversight Process:** There is no clear definition of the process and people (e.g., steering committees) used to oversee KDE projects, release funds and make the "go and no-go" decisions throughout the life cycle of a project.
- ❑ **Project Planning Process:** While there are some project planning documents, KDE projects generally do not have a detailed project plan built around a formal methodology that covers project initiation, planning, execution and close down.
- ❑ **Risk Assessment Process:** Some of the major projects, e.g., Max and School Nutrition, have encountered challenges associated with project size involving availability of time and resources, business requirements, capabilities and skills, and technologies.
- ❑ **Project Phasing and Checkpoints:** There is no clear evaluation of all projects at predetermined "checkpoints" throughout the life of the project by key business and IT stakeholders to ensure the business case still exists and to review the progress and risks.

IT Program Management: Recommendations

■ Develop a Program Management Office (PMO)

- A Program Management Office (PMO) is a shared competency designed to integrate project management practices within an organization.
- A PMO can be a key resource in establishing an organizational competency in project analysis, design, management and review.
- Given the appropriate governance, a PMO accomplishes the following:
 - Establishes an enterprise standard for project management.
 - Improve communication and the leveraging of resources within the organization.
 - Helps reduce the rate of failed IT development projects
- The PMO is the center of project management best practices within the organization.

■ PMO Supports the IT Governance Structure

- Separating the PMO from the IT governance structure ensures that issues like investment prioritization, ranking of IT projects, and resource allocation can be conducted outside of the structured operational management and delivery of IT projects

■ PMO Should be Organized within OET

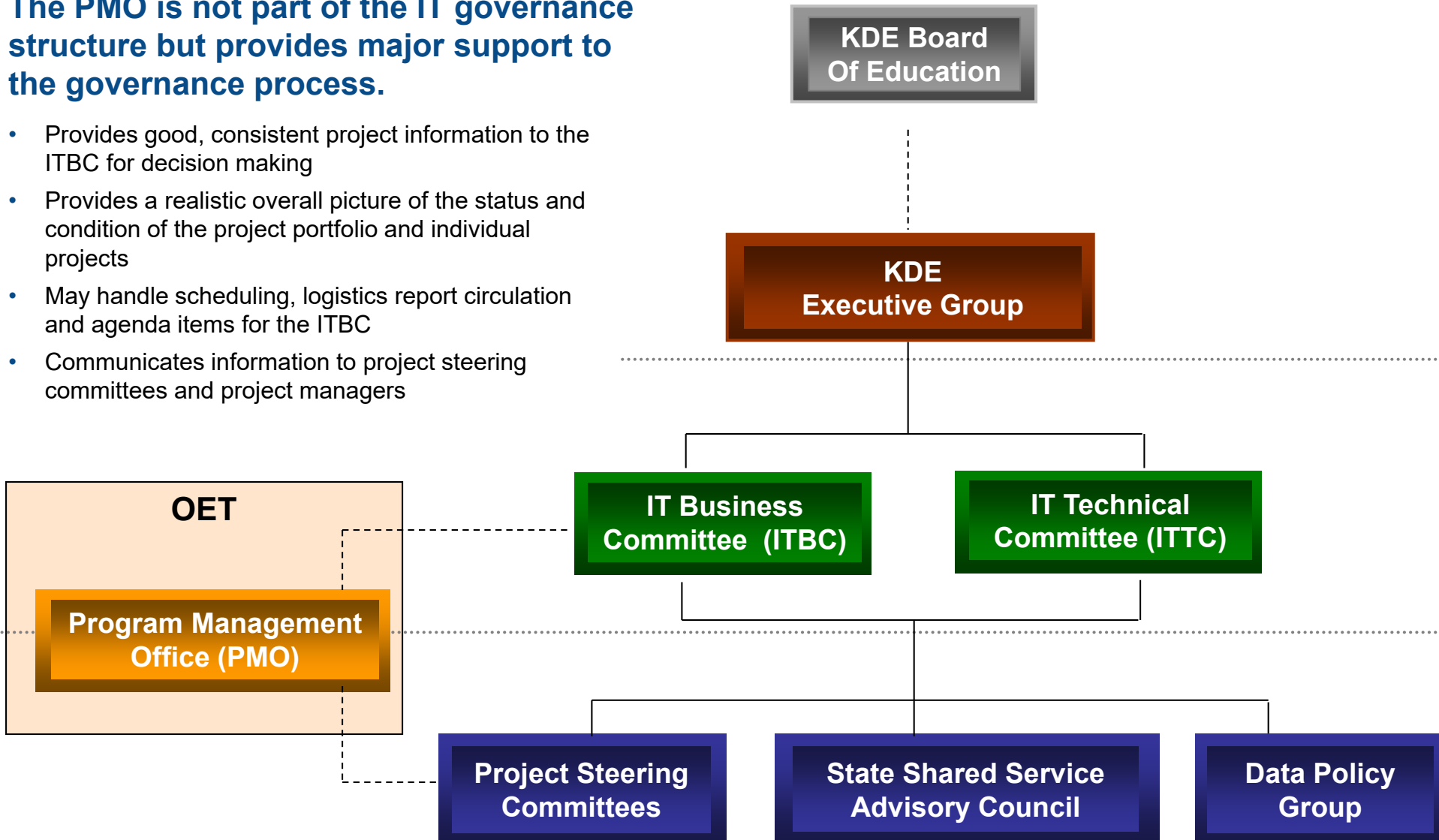
- A project office is usually “housed” within a specific functional/organizational area to ensure sufficient executive authority to manage IT projects. In this case it is recommended that the PMO reside within the OET structure.

IT Program Management: Recommendations

Role of PMO in the IT Governance Structure

The PMO is not part of the IT governance structure but provides major support to the governance process.

- Provides good, consistent project information to the ITBC for decision making
- Provides a realistic overall picture of the status and condition of the project portfolio and individual projects
- May handle scheduling, logistics report circulation and agenda items for the ITBC
- Communicates information to project steering committees and project managers



IT Program Management: Recommendations

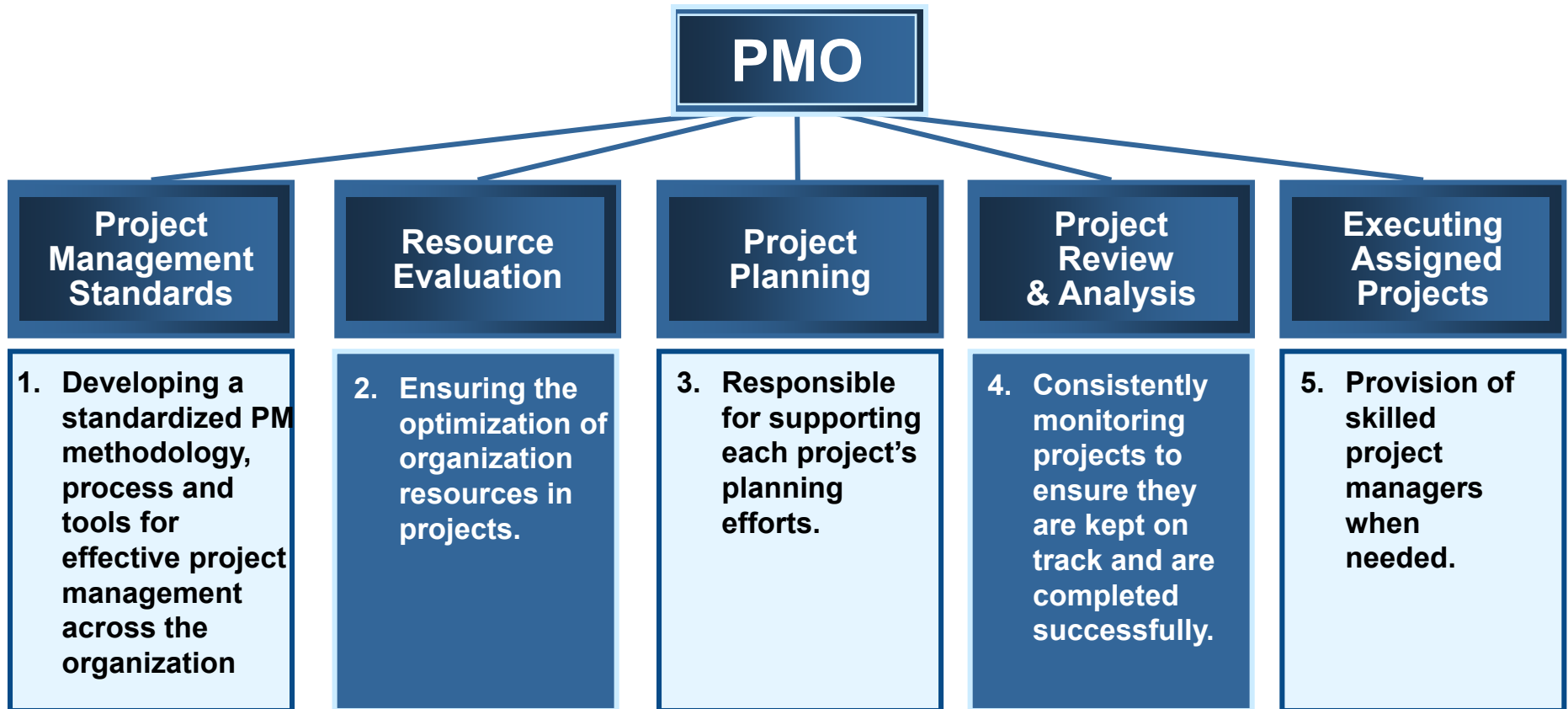
Role of PMO in the IT Governance Structure

- **The PMO Provides Key Support and Coordination for the IT Governance Structure**
 - Coordination and cooperation between a governance board and the project office should be established so that the KDE can more easily make rapid adjustments to the project portfolio based on project information provided by the PMO
- **Key IT Governance Support Roles of the PMO Include:**
 - Handle project portfolio status report circulation and contribute to agenda items, as appropriate
 - An effective project office should prepare support data, analysis and alternative recommendations for the various governing committees
 - Without the coordination by the PMO, a governance board comprising executive management will often find monthly meetings to be too long, ill-prepared and unproductive
 - The PMO may administer (not decide upon) the IT project request process
 - Provides the business case template to the business managers proposing projects, and coordinates the gathering of important prioritization information concerning business goals, customer impact, competitive drivers, initial cost/benefit analysis etc.

IT Program Management: Recommendations

Key Roles of the PMO

- The Five Key Roles of the PMO are:



The PMO is the “Axis” of Project Management in the Organization

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IT Program Management: Recommendations

Evolution of The PMO Model

1. The Repository Model

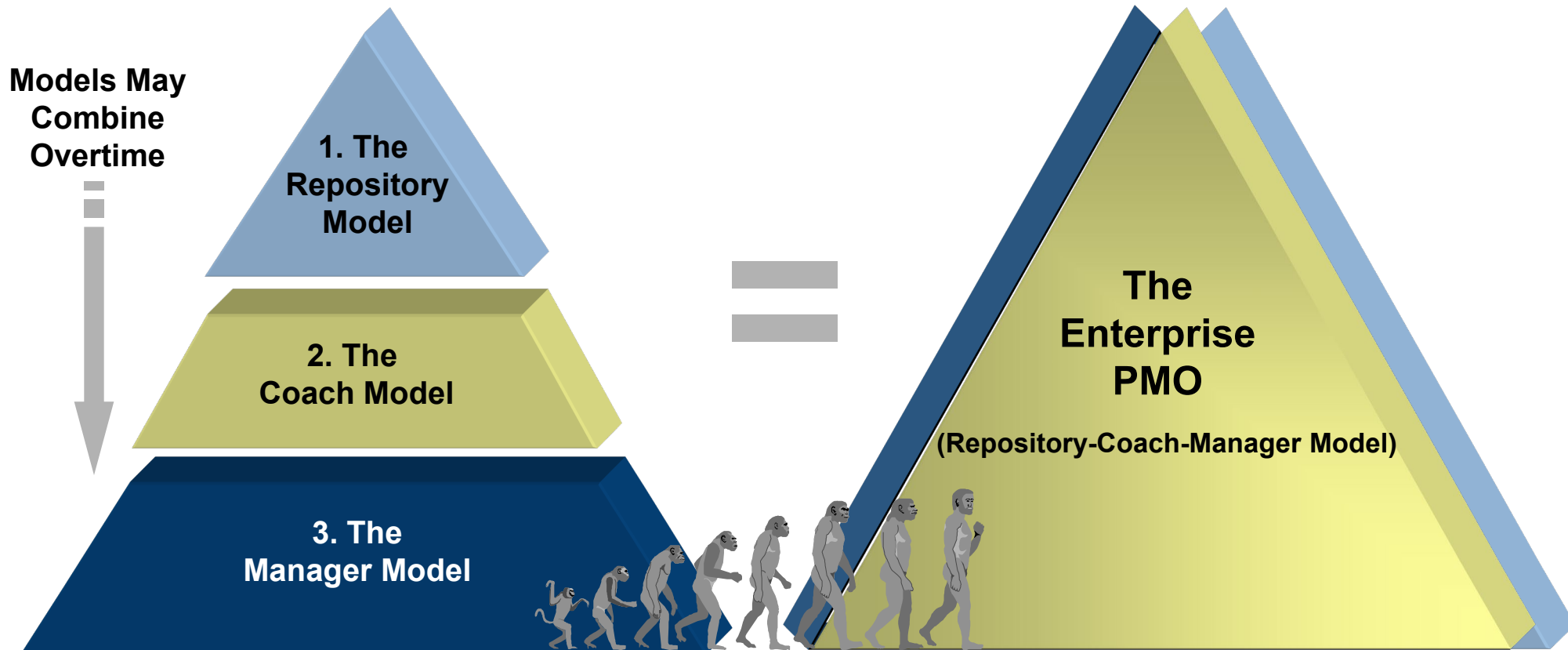
Source of standardized project methodology, tools and knowledge

2. The Coach Model

PMO assumes willingness to share some project management activities and responsibilities across organization functional units and uses the office to coordinate communication

3. The Manager Model

Concentrates Project Management Capabilities and Responsibilities within the PMO and may provide the direct management of projects



IT Program Management: Recommendations

Recommended Enterprise PMO Model

Enterprise Level Coordination

- Participates in All Aspects of Project Lifecycle
- May Provide Project Manager & Staffing
- Maintains Standards and Methodology
- Conducts Organization-wide Project Portfolio Management

Program Level Coordination

Network Mgmt
Shared
Service

Student Data
Program

Application
Replacement

Project Level Coordination

Upgrade
Project

Outsource
Project

Web
Page
Project

Data
Standar
d
Project

Pilots
Project

Deploy
ment

IT Program Management

Critical Success Factors For Implementation

- **The PMO must have a motivated and highly involved executive sponsor (preferably agency director or above)**
- **In the public sector it is much easier to adopt the PMO to current organization structures and culture than to implement major changes.**
 - Leverage as much as possible existing IT governance processes
- **A phased approach to implementation (repository --> coach --> manager models) over time is best in order for the PMO to gradually develop its capabilities and the organization to recognize the PMO's value.**
- **Strong PMO marketing and communications plan to aggressively promote the capabilities of the PMO to departments and agencies.**
 - Free Project Management Seminars
 - Motivate participation of internal and external stakeholders in the PMO development process and communicate the status regularly (newsletter, flyers etc.)
- **Define and communicate the PMO's balance between project support and control functions to ensure departments or agencies understand what is expected of them and what they should expect from the PMO. The invocation of legislative mandates should be used if necessary.**



IT Service Delivery Model

consulting

Kentucky Department of Education
IT Assessment and Optimization Project Final Report
Engagement: 220604280 May 2004

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IT Service Delivery Model

Findings and Observations

■ OET is Currently Adopting a Forward Looking Shared IT Service Delivery Model

- The introduction of the shared services delivery model where school districts and the KDE agency share common IT services provided by OET is a forward looking strategy which is consistent with IT organizational best practices.

Shared services aim to achieve benefits by using a single group to provide a service to multiple agencies or units, rather than each agency requiring its own capacity to provide the service. Benefits result from:

- Enabling aggregated economies of scale or scope
- Facilitating the ability to negotiate from a stronger aggregate base
- Encouraging the adoption of streamlined, common business processes, particularly when significant simplification and standardization are involved
- Enhancing the effectiveness of routine, high-volume IT transactions in areas such as finance, accounting and HR,
 - In KDE's case, Student Information Systems and Financial Information Systems
- Secondary objective of shared services relates to better service quality, in terms of coverage, consistency and timeliness.

IT Service Delivery: Recommendation

Shared Services Models in Government

Broad Scale/Scope

“Whole-of-Government” or Enterprise Approach

- Large number of participants (can exceed 100)
- Common in state government jurisdictions
- Usually involves internal, transactional processes and broad infrastructure capabilities; initiatives typically involve major changes

Mandatory

OET Today

Domain or Cluster Approach

- Modest number of participants (typically 5 to 10)
- Common in federal and state jurisdictions
- Can involve the full range of sharable services; increasingly being used as part of a “whole-of-government” approach.

Joint Initiative Approach

OET Tomorrow

- Moderate to large number of participants (typically 10 to 15 foundation members, can grow to include more than 70)
- Common in municipal/local government jurisdictions and geographic regions
- Can involve a wide variety of sharable processes and capabilities

Voluntary

Limited-Partnership Approach

- Small number of participants (typically 2 to 6)
- Common in municipal/local governments and between jurisdictions (e.g., multiple state governments) and geographic locales
- Can cover any sharable process and capability, often driven by a common “pain point”

Limited Scale/Scope

IT Service Delivery Model

Findings and Observations

■ KDE Business Agency and School Districts Not Viewed as Equal Customers

- As a result of most financial resources going to school districts rather than to the KDE business agency (97% of OET budget dedicated to schools), a better customer relationship has developed between OET and the schools than with KDE.

■ Effective Use of IT Relationship Managers for School District but not for KDE Agency

- The use of business/IT relationship managers for managing school district IT service requirements has been successful in improving customer service and IT effectiveness
 - Seven KETS engineers employed by OET are fully dedicated relationship managers that serve as liaisons between OET and the school districts. Each services a dedicated region.
- The role of business relationship manager for the KDE agency is not fully developed and is undefined. It is divided between the CIO and IT staff member. This could be one of the reasons for the poor perception of IT service delivery by the KDE business agency

■ Inconsistent Understanding of the Cost of Specific Shared Services Provided

- Shared IT services are being provided to the customers for “free,” i.e., OET is not directly charging for the services provided
- The KDE agency and school districts customers do not have concrete information on the total cost and resource requirements for providing IT services, leading to a poor understanding of the resources and requirements to manage these services.
 - E.g. What is the cost of providing statewide e-mail to each customer?
 - E.g. What is the cost of hosting STI and MUNIS for each customer?

IT Service Delivery Model

Findings and Observations

Where is the IS organization focused?

On itself ...

Service Portfolio A

- Server Administration
- Backup and Recovery
- Network Monitoring
- Production Control
- Network Administration
- Password Control
- Help Desk

**OET
Today**

Internal, Technology Focus

...or on its customers?

Service Portfolio B

- Application Development
- Project Management
- Application Hosting
- Workplace Support
- Process Engineering
- Security Management
- Asset Life Cycle Mgmt.

**OET
Tomorrow**

External, Customer Focus

Typical, Worst Practice

Atypical, Best Practice

Are IT services defined in business terms?

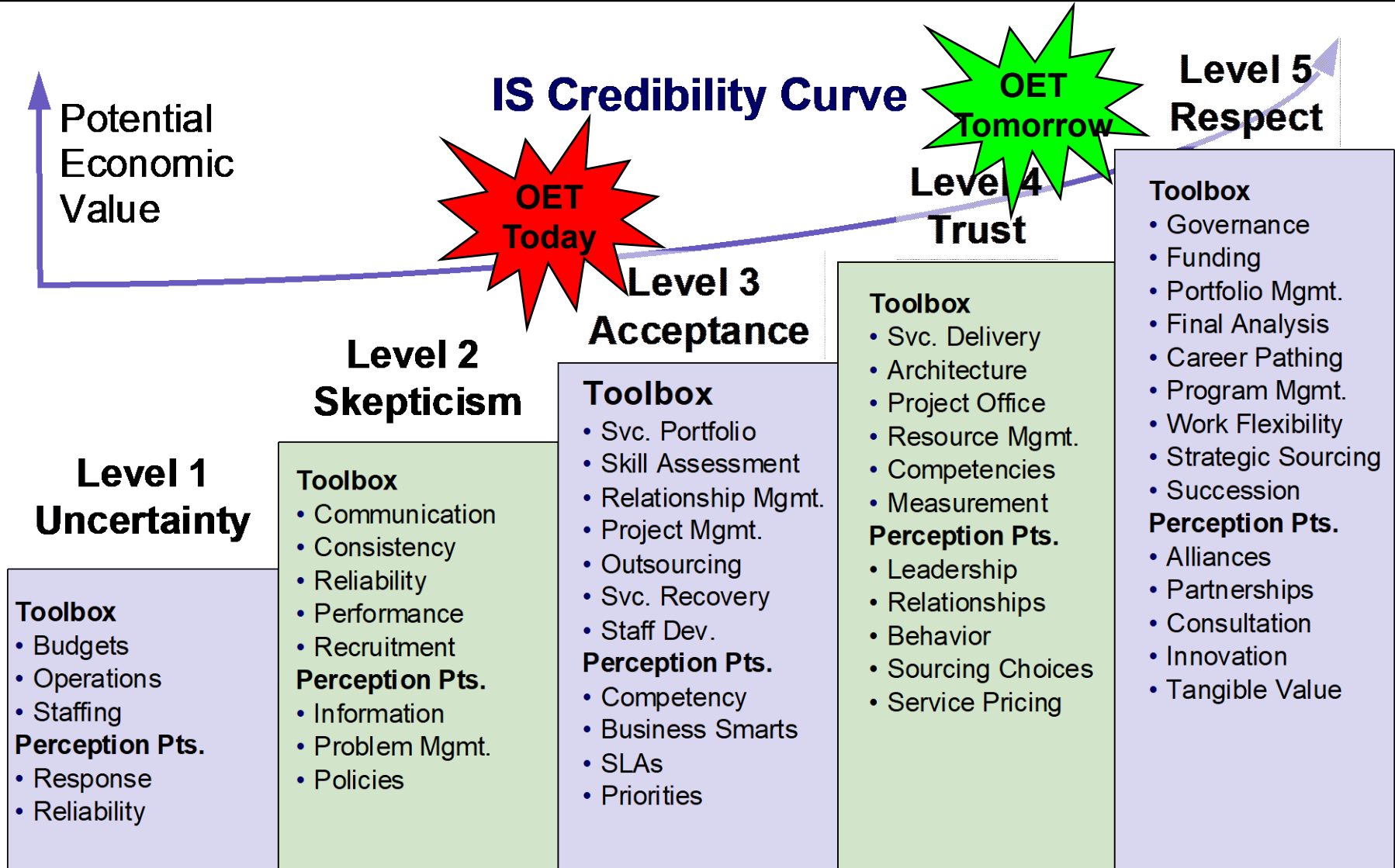
Which services are more likely to resonate with the business?

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IT Service Delivery Model: Findings and Observations

IS Credibility Curve: From Cost Center to Business Center



IT Service Delivery Model Recommendations

OET's shared service delivery model has to continue to mature to fully develop the characteristics of a successful shared IT services organization. Specific recommendations and possible areas for future consideration include:

■ Develop A Well Defined IT Service Catalog

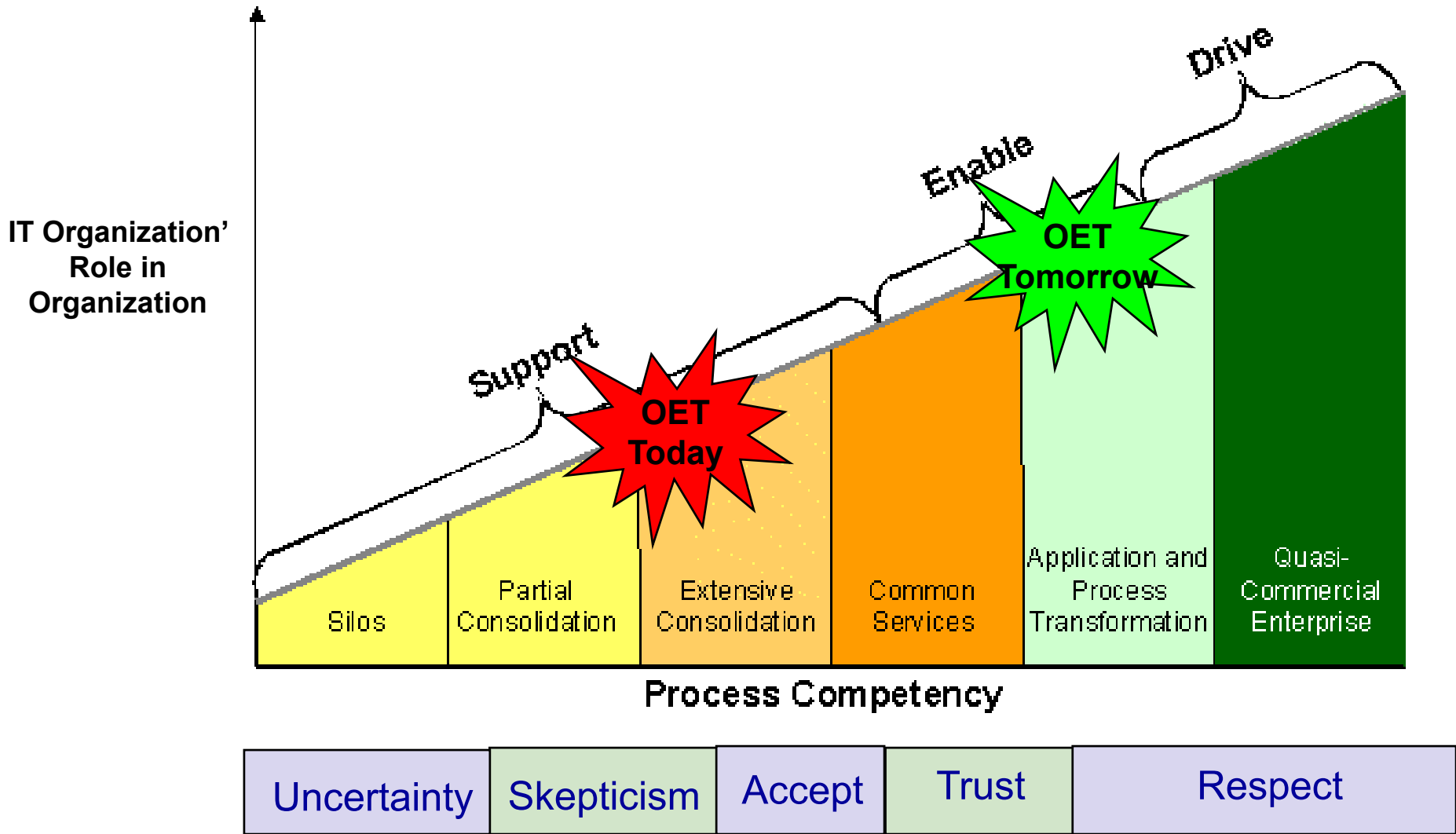
- Formal IT services definition is a critical success factor for the shared service model. It ensures all stakeholders have a clear understanding of the IT services being provided, whether they are provided to the School Districts or to the KDE agency.
- Formal definition of the services will indicate if the services are to be sourced internally within the IT organization or externally by an ESP.
- IS organizations like to talk technology; clients focus on results. OET must continue to change its perspective to address customer concerns, especially for the KDE agency. Internal clients care only about services and results. Therefore, OET should shield clients from the fulfillment steps required to deliver the outcomes, e.g., customers do not care about the process for server back-ups as long as they are able to access their files or e-mail when they need it.
- *Gartner predicts that internal service providers that can't describe their services in terms of benefits and prove the competitiveness of their offerings will see their internal franchises erode at a rate of 25 percent per year (0.7 probability).*

■ Focus on Becoming a Process-Based Organization

- OET must fully adopt process-based management principles. Processes are collections of identifiable and repeatable activities that support a service — for example, for a application hosting service, the processes are network monitoring, backup and production control. OET should fully identify direct relationships between services and processes as it matures its organization

IT Service Delivery: Recommendation

Evolution of the Government IT Organization



IT Service Delivery: Recommendation

What's a Service? Five Core Types

Infrastructure Architecture

Mission and Value:

Fuel efficiency, collaboration and innovation across organizational, geographical and technical boundaries

Sample Services:

Workspace Design & Installation, Supply Chain/CRM Integration

Strategic Sourcing and Relationship Management

Mission and Value:

Fulfill, measure and continuously improve business processes

Sample Services:

Legislative Lobbying, ESP/Vendor Brokering, Union Dispute Arbitration

Specialty Services

Asset Portfolio Management

Mission and Value:

Acquire, maintain, enhance, leverage, protect and dispose of assets

Sample Services:

Patent Filing & Litigation, PC Procurement & Disposal, Real Estate Leasing & Right of Way Management, Worker Retention

Consulting and Project Management

Mission and Value:

Drive enterprise efficiency, innovation, acceleration

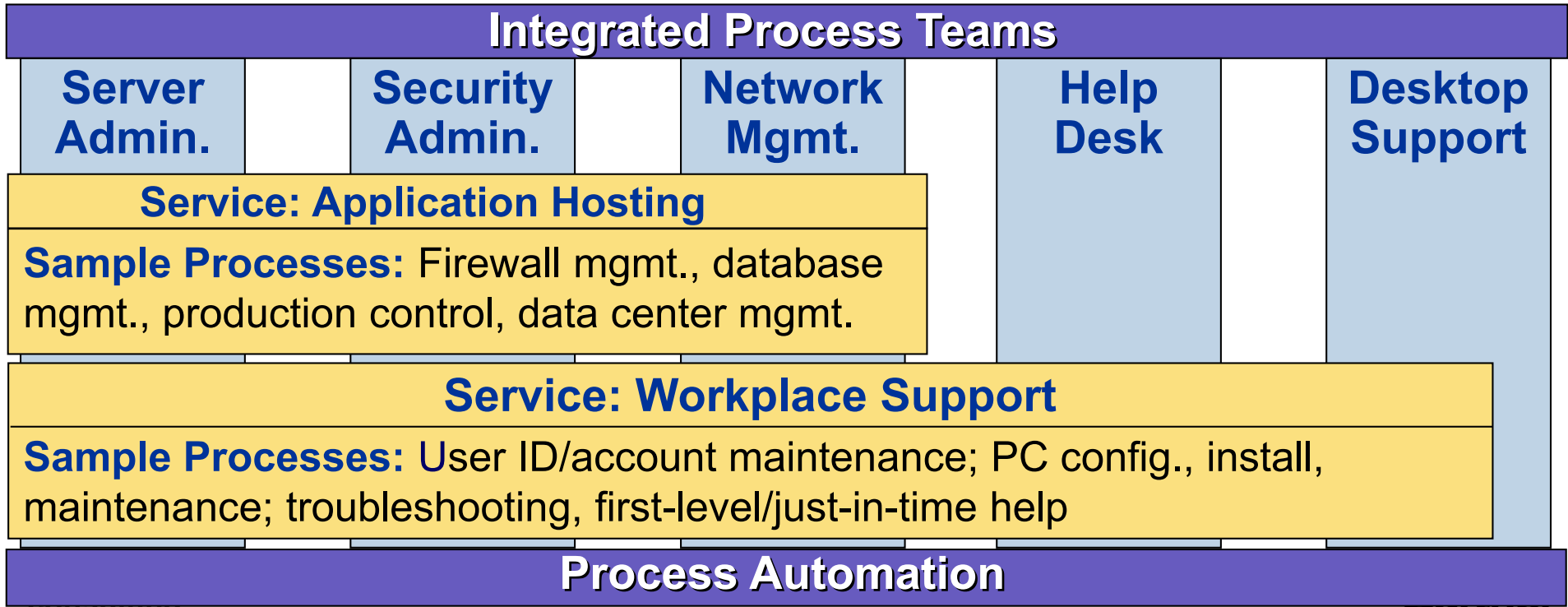
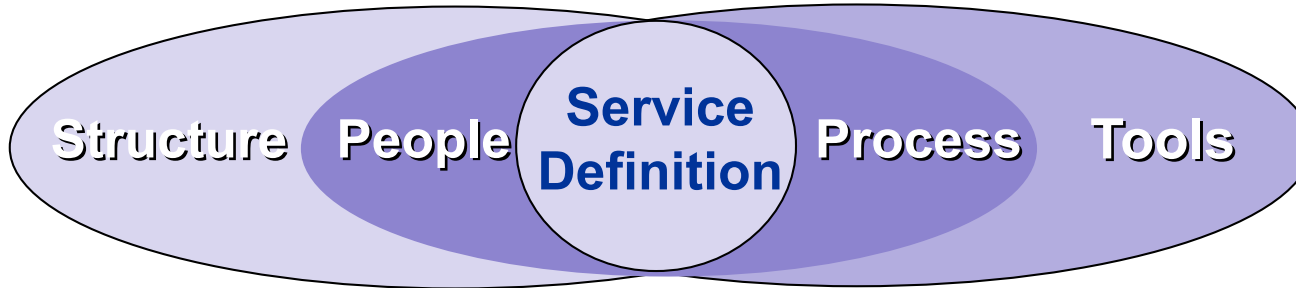
Sample Services:

Project Auditing, Organizational Change, Process Re-engineering

IT Service Delivery: Recommendation

Service Fulfillment: Process, People, Structure and Tools

The Service Management Universe



IT Service Delivery Model Recommendations

■ Further Develop Proactive Relationship Management

- This has occurred relatively well at KDE for the school districts, however KDE should fully develop the role of a IT business relationship manager for KDE agency
- A shared service organization must manage many constituent groups. Each constituent group must have a positive view of the service model for the transformation to succeed. Key stakeholders are:
 - **OET Consumers and Vendors.** End users and external sources of IT care about service performance commitments, options, pricing, measurement and reporting. With both groups, OET must manage performance expectations and results in relation to price.
 - **OET Relationship Managers.** These account executives are the OET's liaison to customers. Their ability to act as a customer advocate hinges on their empowerment, the OET's process engineering efforts to resolve delivery concerns, and a reasonable workload.
 - **OET Service Delivery Management and Staff.** These "doers" of service fulfillment often (initially) resent changes that come about with a new focus on service, processes and team-based fulfillment structures. OET management must coach them to work together across technical disciplines and concentrate on outcomes, not technology.
 - **KDE Business Managers.** OET must manage expectations and perceptions of this group relative to OET's real performance and help KDE business managers learn to make rational supply/demand decisions and expectations regarding the IT services (including IT project services) provided to them by OET.
 - » *Gartner predicts that through 2006, 65 percent of IS organizations undertaking radical transformation will fail to recognize and accommodate at least two major stakeholder groups, reducing their odds of success by more than 50 percent (0.8 probability)*

IT Service Delivery Model Recommendations

■ Consider Flexible Funding, Pricing and Chargeback

- Without a fee, clients perceive OET services as free. That view artificially inflates demand. Without some sort of valuation of services provided, there is a failure to let clients understand the true cost of what they are getting, what business value they're obtaining or how to modify demand to reduce financial impact.
- As a result, clients (and the enterprise as a whole) tend to view OET services as a cost center for doing business, and fund OET via a fixed budget. Without a flexible funding source, the shared service organization can not respond to varying demands; instead, it must take the following, no-win actions:
 - *Refuse work.*: This creates the perception that the OET is not responsive to KDE business units, which spurs clients to seek out external service providers, and introduces further complexity and cost into the support environment.
 - *Scrounge for surplus budget funds*: By tapping into any available excess budget to accommodate unexpected projects, OET actually determines which projects get done, and they assume ownership of the KDE business unit's accountability for the value derived from IT spending.
- *** Pricing for services and charging clients for usage and consumption may be a long term solution for OET. But the current state of maturity and political considerations may preclude such a funding mechanism. Simply knowing the cost of IT services would be a good starting position.**

IT Service Delivery Model Recommendations

■ Actively Explore Additional External Strategic Sourcing Opportunities

- The Shared Service model is based on a philosophy of "let the best provider win." It is, by definition, a mixed-sourcing model.
 - Barring strategic considerations, OET organization should outsource any service it can't deliver on a par with the marketplace.
 - This enables OET to maximize the service value delivered to the business across the entire portfolio, while enabling the OET to leverage its strengths.
- ***Gartner recommends that OET specifically look into strategically outsourcing desktop management for the KDE agency and school districts. This should encompass the potential to fund the upgrade of KDE's currently outdated desktop computing environment.***
 - Desktop management outsourcing is a contractual agreement whereby an external service provider takes on responsibility for the operations or management of specific IT functions within a customer's distributed desktop and associated network environment (including desktop clients, peripherals, servers and LANs).
 - Desktop management contracts are typically multiple years in length and include assorted maintenance and non-maintenance services. All desktop management contracts include one or more of the following management services:
 - Operational Management
 - Applications management
 - Help desk management
 - Asset management
 - Business recovery

IT Service Delivery Recommendations

■ Leverage Possible Shared IT Services With Other Government IT Entities

- There is a possibility that OET could share IT services with other large IT organizations where further economies of scale for cost efficiencies could be explored.

■ Reduce Complexity of the Current IT Environment

- OET should document and formalize an enterprise IT architecture in order to reduce the number of hardware and software platforms supported. This includes development of a IT Infrastructure Refresh Strategy to ensure technology is being replaced at a reasonable rate to keep up with technological advances and lower risks as well as maintenance and support costs.

■ Create and Test an IT Disaster Recovery and Business Continuity Plan

- Currently OET has not implemented sufficient plans for Disaster Recovery and Business Continuity, e.g., redundant sites for technology components providing critical IT services that can come online in case of disasters that may occur in central facilities.
- OET should coordinate IT disaster recovery and business continuity development at the school district level

IT Service Delivery

The Shared Services Organization (SSO) Transformation



From Uncertainty
to Respect



Stage 5: Stabilize Structure

- Design Service-/Process-Based Org.
- Implement Value Pricing and Funding

Stage 4: Use Automated Tools

- Automate Processes
- Implement Self-Service

Stage 3: Develop Relationships

- Map Competencies to Processes
- Establish Governance, SLAs and Relationship Mgmt.
- Segment Customers

Stage 2: Develop New Processes

- Map to Services
- Design and Measure
- Continuously improve

Stage 1: Define Services

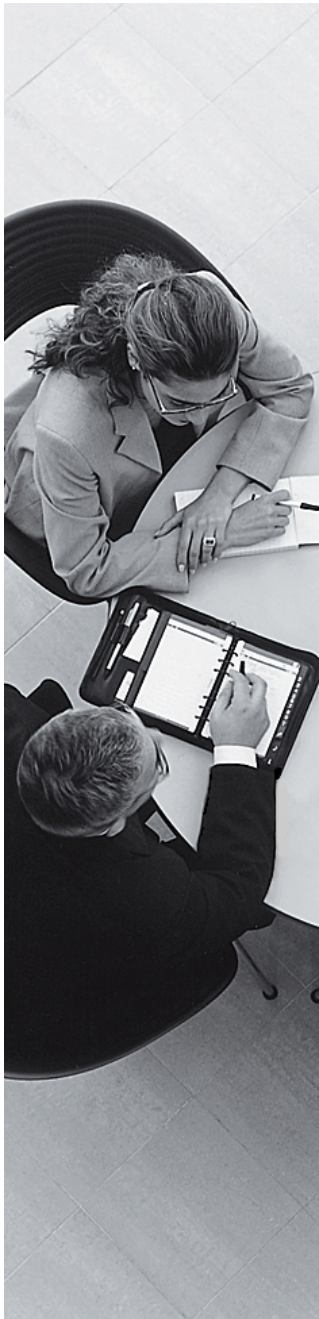
- Define Value-Based Service Portfolio
- Determine Competitive Position

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From Internal
Technical Focus to
External Customer
Focus

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IT Investment Management

consulting

Kentucky Department of Education
IT Assessment and Optimization Project Final Report
Engagement: 220604280 May 2004

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IT Investment Management Findings and Observations

- **IT investment management includes the processes involved with making spending decisions for information technology**
- **IT investment management is both a formalized and informal process at KDE depending on the level at which decisions are made.**
 - Ultimate decision making regarding the overall technology budget and some big ticket IT projects is formally made at the Board of Education.
 - At a management level the process is semi-formal, with the decision making process different for IT projects originating from either OET or KDE business units.
 - Decisions regarding IT investment priorities have usually been made at the OET or KDE business unit level before they come up for final approval.
- **By determining what IT investment priorities go forward for final approval to KDE executive management and the board, key decision making regarding for IT investment priorities lies with the CIO.**
 - This applies to the majority of projects and services funded through the IT allocated budget (KETS funding).

IT Investment Management Findings and Observations

- **Priorities regarding IT related projects funded outside of KETS funding and originating from business units are made by the KDE associate clearinghouse (consisting of deputy commissioners).**
 - KDE projects are submitted for approval through a standardized KDE associates clearinghouse consent proposal ("glimmer").
 - This proposal solicits project descriptions, budget and other resource information that would facilitate informed decision making by the clearinghouse. OET is present at these meetings but does not have a decision-making role at this level.
 - The clearinghouse is responsible for both business and IT project decisions.
- **Effective management of all KDE applications is a critical piece of overall IT investment management. Decisions regarding currently deployed applications are made primarily by OET with input from the KDE business units.**
- **KDE has a great opportunity to optimize its IT investment management process in order to maximize the value of its IT investments.**

IT Investment Management Strengths and Areas of Improvement

■ Strengths of Current Processes Are:

- ❑ Clear decision-making authority and process for approval of IT budgets by KDE executives and Board of Education
- ❑ Associate clearinghouse process for KDE agency originated projects, that facilitates fully informed decision-making
- ❑ Use of the "Software Derby" tool to explain the current status and priority of IT applications to business executives.
- ❑ A stable process foundation for the development of a consistent IT investment management across the KDE enterprise, i.e., some process are already in place and can be future developed without starting from scratch

■ Areas for Improvement Are:

- ❑ Since not all KDE IT projects are put through a consistent IT investment management process, there is an opportunity to develop a process that evaluates and prioritizes IT investments based on uniform criteria that is understood by both business and IT stakeholders
- ❑ There is an opportunity to define an IT investment prioritization process for KETS funded projects that fully engages business level decision makers and provides them with business (rather than technical) level information that is sufficient for them to make independent IT decisions

IT Investment Management Recommendation

■ Conduct an Formal Review of all IT Projects Over \$250,000 (or Other Determined Size)

- OET is currently managing too many IT projects. This has resulted in resource constraints that may have lead to the poor delivery of IT projects.
- KDE needs to conduct a comprehensive review of all its IT projects to ensure that it is making effective and strategic decisions regarding IT investments. Key questions to be asked are:
 - Considering tangible project deliverables and resources consumed of each project, is the project worth continuing?
 - What projects are considered high priority?
 - Are the projects really generating business value?
 - What are the short and long term impacts of aggressively canceling or putting projects on hold?

■ Develop an IT Project Business Case Process

- A high priority for KDE should be to implement a business case process for all IT projects in order to define and justify projects and initiate appropriate project planning
 - Each IT project regardless of where it originates, e.g., from a KDE agency department or OET must go through a consistent justification process.
 - The IT governance structure is key to the business case process, the IT business committee will be responsible for making “go/no-go” decisions regarding al IT projects

IT Investment Management Recommendation

■ Develop a Project and Application Portfolio Management Process

□ Project Portfolio Process

- Project Portfolio management at KDE has significant opportunities for improvement. While the use of the “software derby” is a good starting point, there needs to be a more robust process for managing KDE’s IT project portfolio that includes the following:
 - » Justifying and approving projects
 - » Evaluating one time and ongoing resource capabilities/needs
 - » Tracking of resources consumed, risks, attainment of business value across all IT projects
 - » Ensuring the status of the project portfolio is visible to business stakeholders

□ Application Portfolio Process

- The implementation of a formal and centralized application portfolio management process within KDE that incorporates input from the business units will facilitate better decision making regarding continued investments in current applications.
- A formal process for evaluating KDE’s application portfolio would allow for business decision making on potential enhancement, retirement, and de-commissioning of applications based on their business value to KDE.
- This has the potential of saving costs as well as targeting investment dollars on those applications that provide good business value to KDE.

IT Investment Management: Recommendation Project Portfolio Management (PPM) Steps

- PPM is a 5-step Process for Prioritizing and Managing Initiatives
- Process is not Sequential, but has Feedback Loops



IT Investment Management: Recommendation

Step 1: Define Investments in Comprehensive, Uniform Format



■ Define Investments Using a Business Case Format

- Gather comprehensive data about each proposed and current investment and document using a uniform format, so that competing initiatives can be compared.

■ Determine Whether to Use One - or Two-stage Project Evaluation

□ One-Stage Approach:

- Prepare a full business case or cost/benefit analysis, with sufficient information to determine its worth to the business.

□ Two-Stage Approach:

1. Prepare a preliminary project proposal with less information, perhaps only a two-page summary outlining the project concept.
 - » The decision makers need just enough information to judge the viability of the concept, and whether to fund the development of a full business case.
2. If the project proposal has a viable concept, fund the development of a full business case
 - » Large initiatives, such as programs and endeavors, usually go through this two-stage process

IT Investment Management: Recommendation

Step 1: Define Investments in Comprehensive, Uniform Format



1. PRELIMINARY PROPOSAL or PROJECT CONCEPT

1. Project name/description
2. Business need/objectives
3. Project sponsor
4. Rough cost estimates
5. Rough benefits estimates
6. Fit with business/IT strategies

2. BUSINESS CASE

1. Project name/description
2. Business need/objectives
3. Project sponsor
4. Alternatives
5. Assumptions
6. Cost estimates
7. Benefits estimates
8. Fit with business/IT strategies
9. Implementation strategy
10. Infrastructure requirements
11. Risk factors
12. Project schedule

IT Investment Management: Recommendation Project Review Process



IT Investment Management: Recommendation

Step 2: Evaluate Initiatives Using Objective Criteria



- Evaluate initiatives using a combination of financial and non-financial measures

Focus area	Evaluation criteria	Definition
Value	Business value	The expected business benefits of the investment, usually expressed by business value metrics, such as customer satisfaction, product quality
	Financial return	The expected return from the investment; usually a calculation based on the degree to which the planned benefits exceed the estimated investment cost
Alignment	Strategic fit	Degree to which the investment supports the enterprise's strategic business objectives
	Technical fit	Degree to which the investment fits with the enterprise's technical architecture
Risk	Implementation risk	The risk of implementation being more expensive or taking longer than planned, or of not completing
	Operational risk	The risk of not getting the planned benefits from the investment
Other	Investment themes Pre-determined allocation of funds, e.g. target portfolio mix Implementation schedule Cash flow requirements	

IT Investment Management: Recommendation

Step 3: Prioritize Initiatives



- Investment categories can be used to group initiatives with similar characteristics
- The scoring model should reflect management objectives

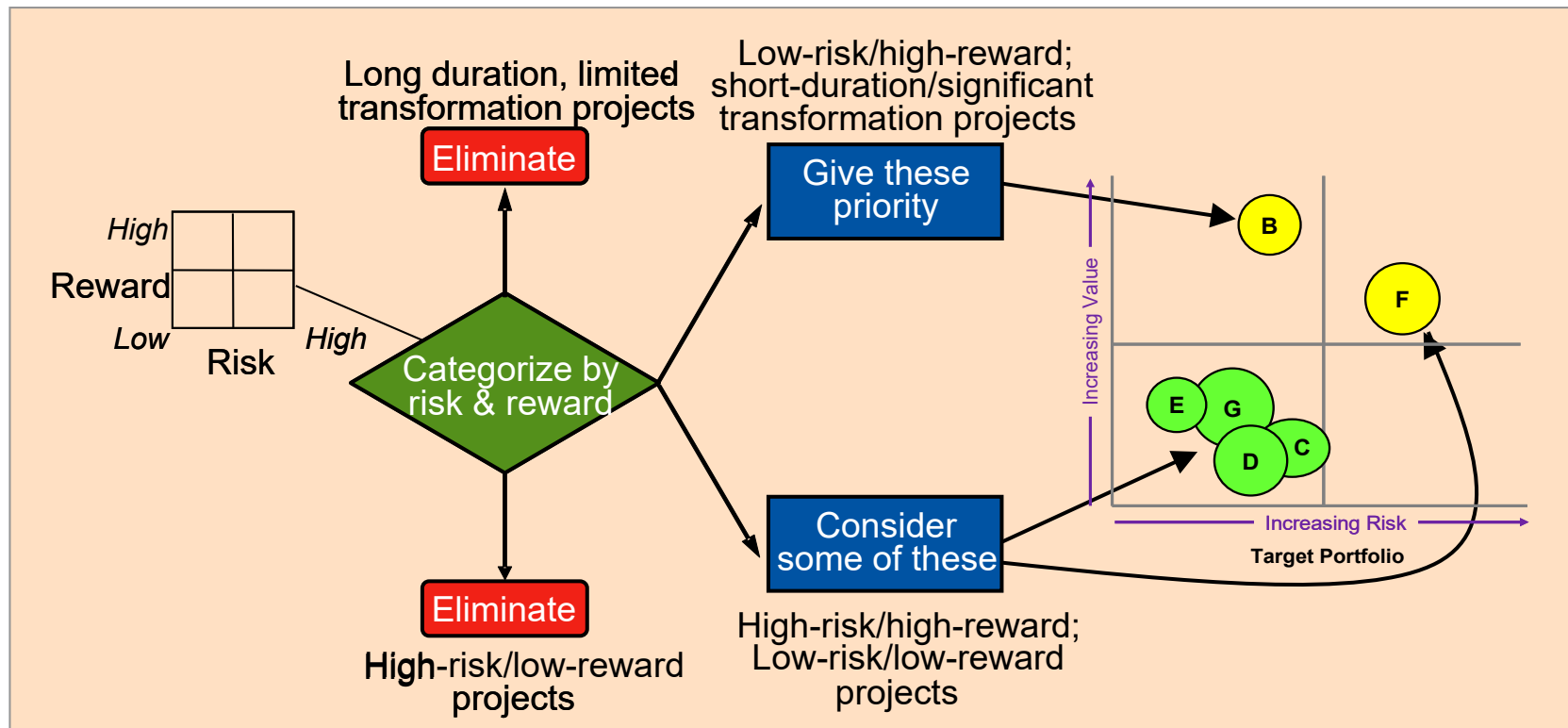
Evaluation criterion	Score	Weight %	Weighted Score
Return on investment	8	50	40
Strategic fit	7	30	21
Probability of success	5	20	10
Project Score			71

IT Investment Management: Recommendation

Step 3: Prioritize Initiatives



- Balance portfolio to optimize overall return for an acceptable risk level
- Approve high priority projects one phase at a time to limit financial risk.



- Above example aims to increase value while reducing risks, by screening out high-risk/low-reward initiatives and long-duration/limited-transformation projects.
- It gives priority to low-risk/high-reward initiatives and achieves balance by considering one high-risk/high-reward project and a few low-risk/low-reward ones.

IT Investment Management: Recommendation

Step 4: Match Prioritized Initiatives to Resources



- **Match initiatives to resources until the resources are exhausted**
 - Example: Draw a line under the lowest-ranked initiative on a cumulative-cost list that doesn't exceed the budget, as shown in the figure below
- **Put remaining projects “on hold” for future review or consider adding external resources**
- **Re-schedule projects to accommodate other constraints, these include budget, staff or skills availability, project interdependencies, mandatory implementation dates, vendor schedules and cash flow requirements.**






Initiative name	Weighted score	Estimated cost (\$ M)	Cumulative cost (\$ M)	
Initiative M	Mandatory	2	2	
Initiative F	80	25	27	
Initiative C	74	11	38	
Initiative J	70	31	69	
Initiative A	60	9	78	
Initiative E	53	13	91	New initiative budget: \$80M
Initiative D	50	20	111	




IT Investment Management: Recommendation

Step 4: Match Prioritized Initiatives to Resources



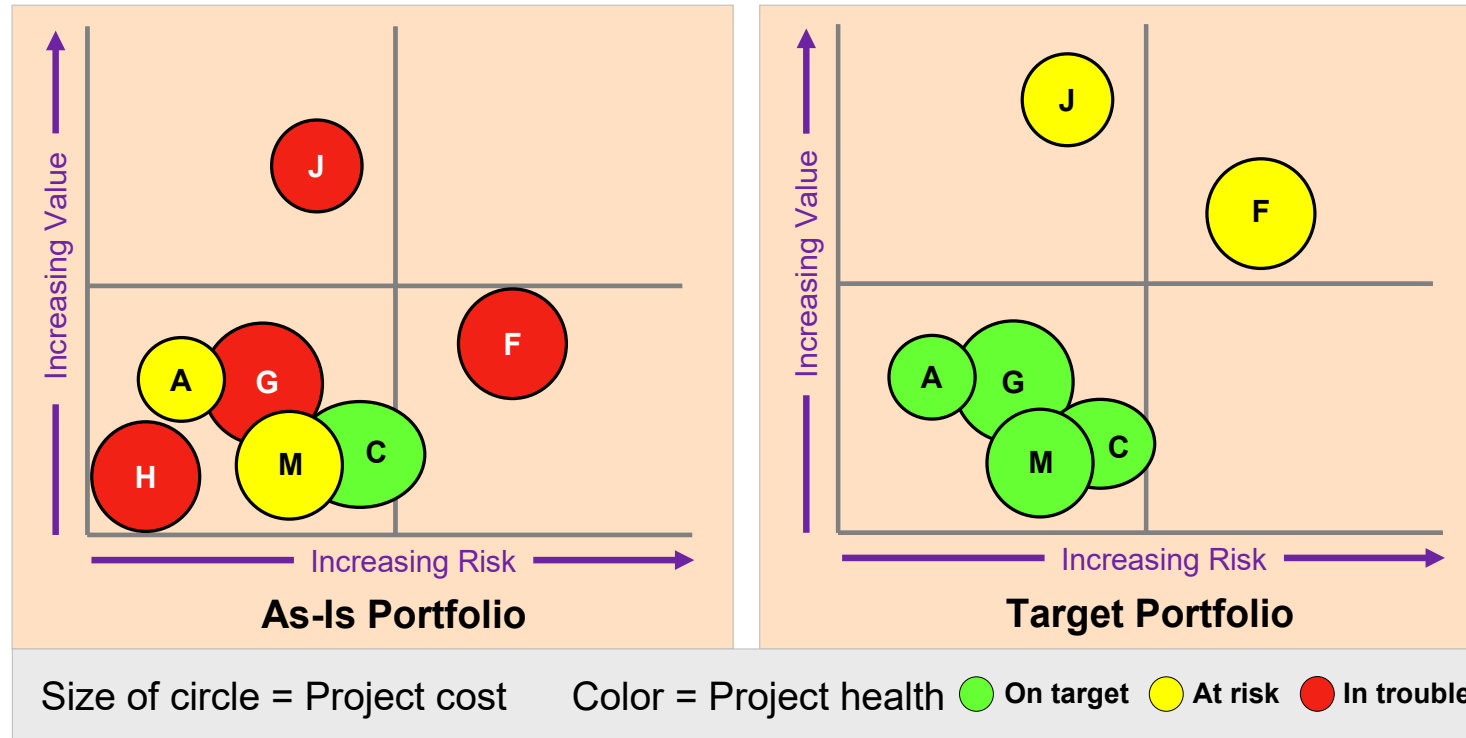
Sample Tool for Matching Resource and Skills Availability to IT projects

Core Role	Number of Staff				Overall Readiness Assessment
	Currently In-house	Currently from Outside	Needed for 2001	Gap	
Vendor Management	12	4	20	4	
Technology Advancement	14	4	18	0	
Business Enhancement	25	0	45	20	
Architecture Development	5	6	11	0	
IT Leadership	12	0	14	2	

-  = Required resources are already available
-  = Know how to acquire required expertise
-  = Serious shortfall anticipated

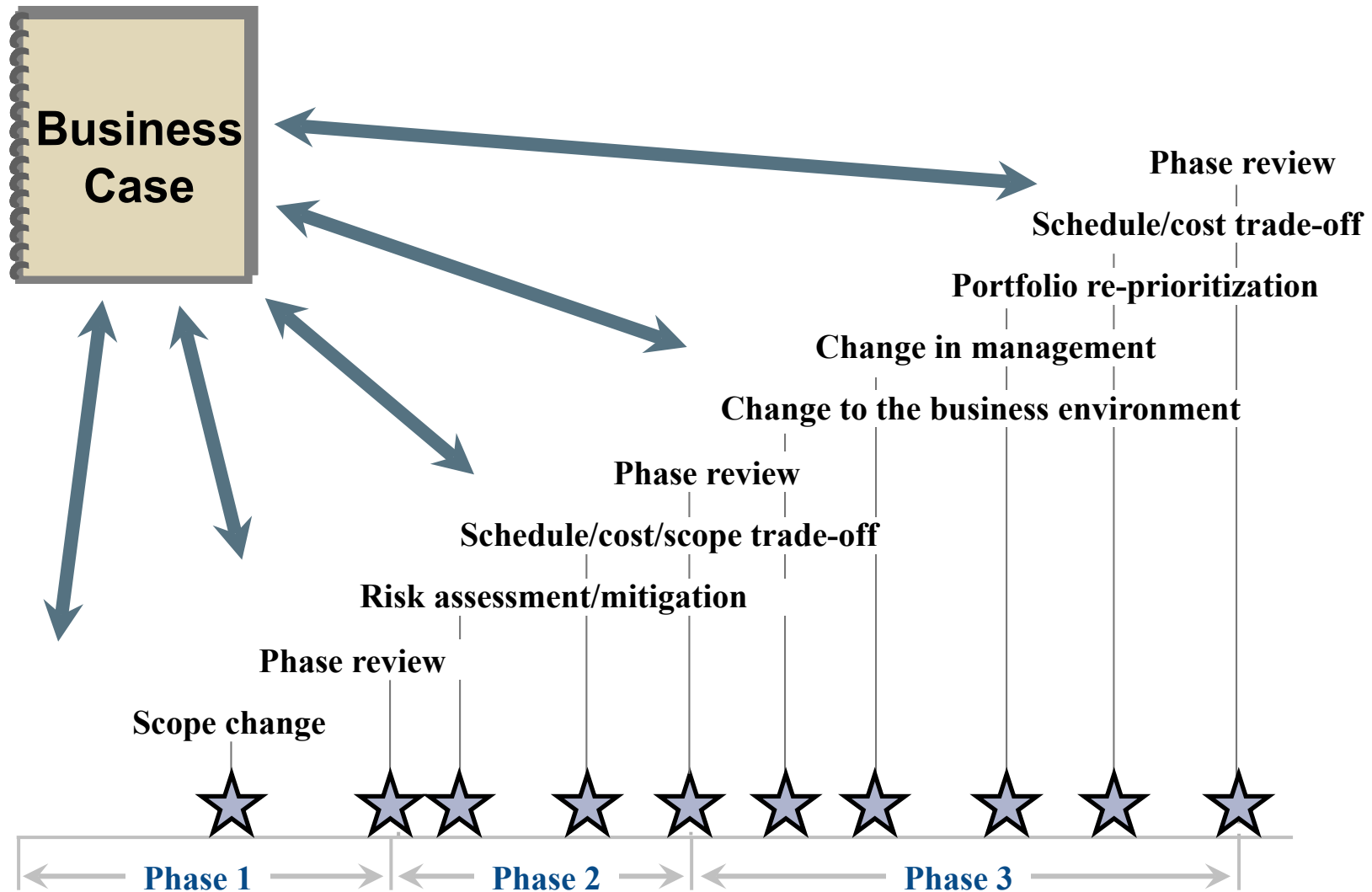
IT Investment Management: Recommendation

Step 5: Actively Manage Current Portfolio To Target State



- Plot the current portfolio on a graph with business value increasing on the vertical axis and risk increasing on the horizontal axis
- In this way the entire portfolio can be viewed easily and corrective action can be made for “red” bubbles that indicate troubled projects

IT Investment Management: Recommendation Business Cases Guide Project Execution



IT Investment Management: Recommendation

Example: IT Portfolio—By Investment Type

Legal Mandate	Enhancement	Frontier	
<ul style="list-style-type: none"> ① Info Assurance \$11.6M ② IT Investment Mgt. \$2.3M ③ Enterprise Arch. \$1.0M 	<ul style="list-style-type: none"> ⑧ LADMP \$108.6M ⑫ CAWT \$12.9M ⑭ IPOEC \$7.3M ⑮ STXEU \$95.1M ⑰ MRO \$19.2M ⑳ Cyber Crime \$4.2M ㉒ PGISJ \$2.5M ㉔ GENESYS \$1.3M ㉖ EDR \$17.2M 	<ul style="list-style-type: none"> ⑪ QUIZA \$16.0M ⑬ VOREAL \$90.1M ㉑ Info Study \$7.0M ㉓ ASSET DB \$2.6M ㉗ Metric Study \$8.0M ㉘ ARTS \$3.5M 	<p>Legal Mandate \$ 14.8M 2.4%</p> <p>Enhancement \$268.3M 43.2%</p> <p>Frontier \$127.2M 20.5%</p> <p>Infrastructure \$166.5M 26.8%</p> <p>Utility \$ 44.5M 7.2%</p>
Total Value \$14.8M / 2.4%	Total Value \$268.3M / 43.2%	Total Value \$127.2M / 20.5%	<p>Balance Risk of Total (28 Projects)</p> <ul style="list-style-type: none"> ● High Risk (Red) 3 ● Medium Risk (Yellow) 17 ● Low Risk (Green) 8
Infrastructure	Utility		
<ul style="list-style-type: none"> ⑤ BINARY O&M \$61.5M ⑥ BINARY TRP \$58.1M ⑦ FREs \$20.0M ⑨ JOBS SOS \$5.5M ⑩ LEGIS \$9.1M ⑯ SECURE \$1.5M ⑰ Data Center \$8.9M ⑱ Telephone \$1.9M 	<ul style="list-style-type: none"> ④ DOCIM \$42.3M ㉕ VACUUM \$2.2M 		
Total Value \$166.5M / 26.8%	Total Value \$44.5M / 7.2%		
<p>Legend:</p> <ul style="list-style-type: none"> ■ Legal Mandate—A project or initiative mandated by legislation, executive order, legal requirement or policy/guidelines ■ Enhancement—Adding new functions, features or capabilities to an existing program ■ Frontier—Assessing/developing new or future capabilities ■ Infrastructure—Maintenance and technical refresh for existing systems, programs, etc. ■ Utility—Administrative capabilities required to manage core business processes. 			

Total 28 Projects (\$621.2M)

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IT Investment Management: Recommendation

Example IT Portfolio—By Program/Strategy

<p>Public Safety</p> <ul style="list-style-type: none"> 9 JOBS SOS \$5.5M 13 VOREAL \$90.1M 19 MRO \$19.2M 21 Info Study \$7.0M 22 PGISJ \$2.5M 23 ASSET DB \$2.6M 26 EDR \$17.2M 27 Bio Study \$8.0M 28 ARTS \$3.5M <p>Total Value \$155.6M / 25.0%</p>	<p>Management & Admin</p> <ul style="list-style-type: none"> 2 IT Investment Mgt. \$2.3M 3 Enterprise Arch \$1.0M 4 DOCIM \$42.3M 25 VACUUM \$2.2M <p>Total Value \$47.7M / 7.7%</p>	<p>Utilities</p> <ul style="list-style-type: none"> 8 LADMP \$108.6M 12 CAWT \$12.9M 15 STXEU \$95.1M 20 Cyber Crime \$4.2M 24 GENESYS \$1.3M <p>Total Value \$222.1M / 35.8%</p>	<table border="0"> <tr> <td>Public Safety</td> <td>\$155.6M</td> <td>25.0%</td> </tr> <tr> <td>Mgt. & Admin.</td> <td>\$ 47.7M</td> <td>7.7%</td> </tr> <tr> <td>Utilities</td> <td>\$222.1M</td> <td>35.8%</td> </tr> <tr> <td>Community Relations</td> <td>\$ 27.3M</td> <td>4.4%</td> </tr> <tr> <td>Infrastructure</td> <td>\$168.5M</td> <td>27.1%</td> </tr> <tr> <td>Training & Educ</td> <td>\$ 0.0M</td> <td>0.0%</td> </tr> </table>	Public Safety	\$155.6M	25.0%	Mgt. & Admin.	\$ 47.7M	7.7%	Utilities	\$222.1M	35.8%	Community Relations	\$ 27.3M	4.4%	Infrastructure	\$168.5M	27.1%	Training & Educ	\$ 0.0M	0.0%
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<p>Community Relations</p> <ul style="list-style-type: none"> 7 FREs \$20.0M 14 IPOEC \$7.3M <p>Total Value \$27.3M / 4.4%</p>	<p>Infrastructure</p> <ul style="list-style-type: none"> 1 Info Assurance \$11.6M 5 BINARY O&M \$61.5M 6 BINARY TRP \$58.1M 10 LEGIS \$9.1M 11 QUIA \$ 16M 16 SECURE \$1.5M 17 Data Center \$8.9M 18 Telephone \$1.9M <p>Total Value \$168.5M/ 27.1%</p>	<p>Training & Education</p> <p>Total Value \$0M / 0.0%</p>	<p>Balance Risk of Total (28 Projects)</p> <ul style="list-style-type: none"> ● High Risk (Red) 3 ● Medium Risk (Yellow) 17 ● Low Risk (Green) 8 																		

*Don't Forget:
People Still
Make the Decisions*

Total 28 Projects (\$621.2M)

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IT Vendor Management

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Kentucky Department of Education
IT Assessment and Optimization Project Final Report
Engagement: 220604280 May 2004

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IT Vendor Management Findings and Observations

■ Contract Management

- OET is responsible for negotiating contracts with vendors who provide equipment and services to school districts
 - All school districts are mandated to purchase IT goods and services using these contracts that have been pre-negotiated by OET.
- Use of "master" contracts is a best practice for shared IT services organizations such as OET
 - Taken in aggregate, the State of Kentucky is potentially making large savings by using these standardized contracts
- OET faces the issue where some stakeholders feel that while such contracts are advantageous, the contracts may not be updated regularly enough to take advantage of price changes resulting from industry shifts.
 - Regular updating of contracts they believe will help keep up with industry price changes.
- For the most part school district stakeholders are satisfied with the level of service provided to them through third-party IT vendors

IT Vendor Management

Findings and Observations

■ Outsourcing Management:

- KDE maintains two major outsourcing contracts with vendors who support the two largest business applications in use across the State, STI (a student information management system) and MUNIS (a financial management system).
 - These outsourcing agreements have enabled OET to deploy and maintain these applications without having to increase internal staff and resource requirements, while maintaining a good level of service.
 - Major issues with these contracts involve the difficulty in transitioning the contracts from one-time project delivery contracts to continuous service provision contracts.
 - It is felt that explicit Service Level Agreements (SLAs) accompanied with well defined performance measurement criteria need to be further developed in order to improve vendor accountability for the services they provide.
- OET also engages in staff outsourcing with about 60% of its current staff coming from staff augmentation IT vendors
 - This is considered a form of quasi outsourcing, while the staff are not KDE employees that are still directly managed and housed under KDE management
 - KDE retains the risk of performance for these contract staff

IT Vendor Management Findings and Observations

■ Stakeholder Involvement in Vendor Management

- Involvement by business stakeholders in decision making and governance regarding the management of third party vendors could be improved to facilitate communication between OET and stakeholders regarding vendor management.
- Participation in the following area is seen as needing improvement.
 - Input in decisions regarding vendor and technical solution choice to ensure stakeholder requirements are met
 - Mechanisms to facilitate enhanced flexibility in contracts to meet individual stakeholder needs while maintaining the efficiency of shared equipment and service contracts.

IT Vendor Management Recommendations

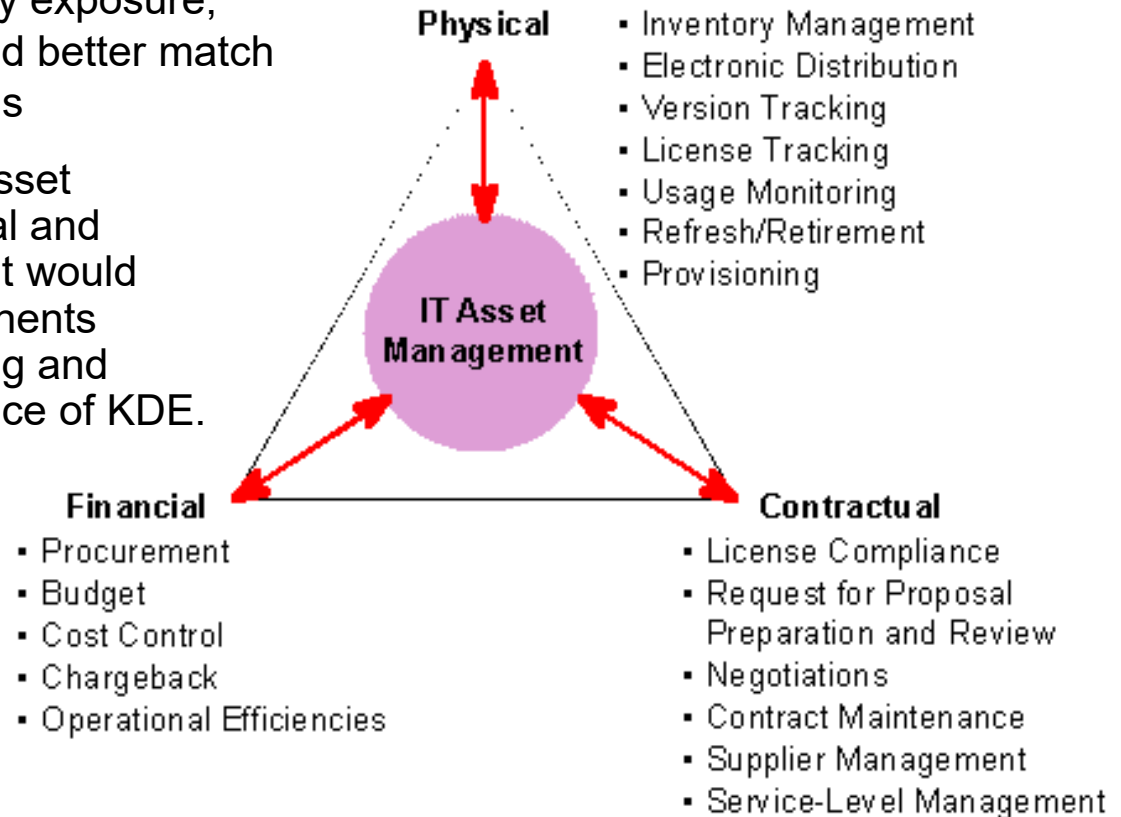
- **Further Develop an IT Sourcing Strategy for Application Development and Future Shared Services**
 - KDE should develop a sourcing strategy that addresses the following:
 - Potentially shift the risk of developing applications from in-house to external vendors
 - Aggressive vetting on build vs. buy strategies, where the priority is on purchasing Commercial-Off-the-Shelf (COTS) rather than developing customized applications
 - Shifting development activities outside the organization means that OET can reduce the number of temporary augmented staff and also enable OET to hold vendors more accountable for the successful delivery of applications
 - Consistently employ a philosophy of "let the best provider win." Barring other strategic and political considerations, OET should regularly consider how it sources shared IT services. Those services that cannot be effectively delivered in-house or are not strategic to KDE's business goals should be considered candidates for outsourcing.
- **Establish a Vendor Management Competency Center**
 - As OET shifts to managing more external service providers (ESP), it needs to develop a robust vendor management competency that can oversee and manage the execution of IT services provided by ESPs
 - Such a competency would be charged with developing flexible master contracts and establishing service level agreements (SLAs) and other vendor performance management capabilities/instruments

IT Vendor Management Recommendation

■ In the Long Term, OET should Deploy an Asset Management System

- Not keeping proper track of distributed computing hardware assets can increase costs by 7 percent to 10 percent a year.
- Effective asset management not only to reduces costs, but reduces liability exposure, improves software compliance and better match use of services with contract terms
- There are three components IT asset management — physical, financial and contractual. IT asset management would provide the data for these components necessary for effectively managing and optimizing the IT asset performance of KDE.

The Three Components of IT Asset Management





Implementation Roadmap

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Implementation Roadmap

Key Programs and Associated Projects

- Gartner's recommendations can be implemented as several prioritized IT programs each with a number of associated projects that seek to improve KDE's IT efficiency and effectiveness
- These are prioritized and plotted on a three year time scale and used as roadmap for implementation
- The following programs and associated projects are suggested for further refinement
 - **IT Governance Program**
 - Comprehensive IT Project Review
 - IT Governance Structure Deployment
 - Project Portfolio Management Process
 - Application Portfolio Management Process
 - Business Case Process
 - Instructional Technology Alignment
 - **Program Management Office (PMO) Development Program**
 - PM Training
 - PM Tools and Methodology Development
 - **Infrastructure Consolidation Program**
 - Desktop Outsourcing Feasibility Project
 - Others as Identified

Implementation Roadmap

Key Programs and Associated Projects

□ IT Shared Service Delivery Development Program

- KDE Bus.Relationship Manager Position
- Shared Services Communications Development
- Service Definition
- Sourcing Strategy

□ Disaster & Business Continuity Program

- OET Plan Development
- School District Plan Development Project

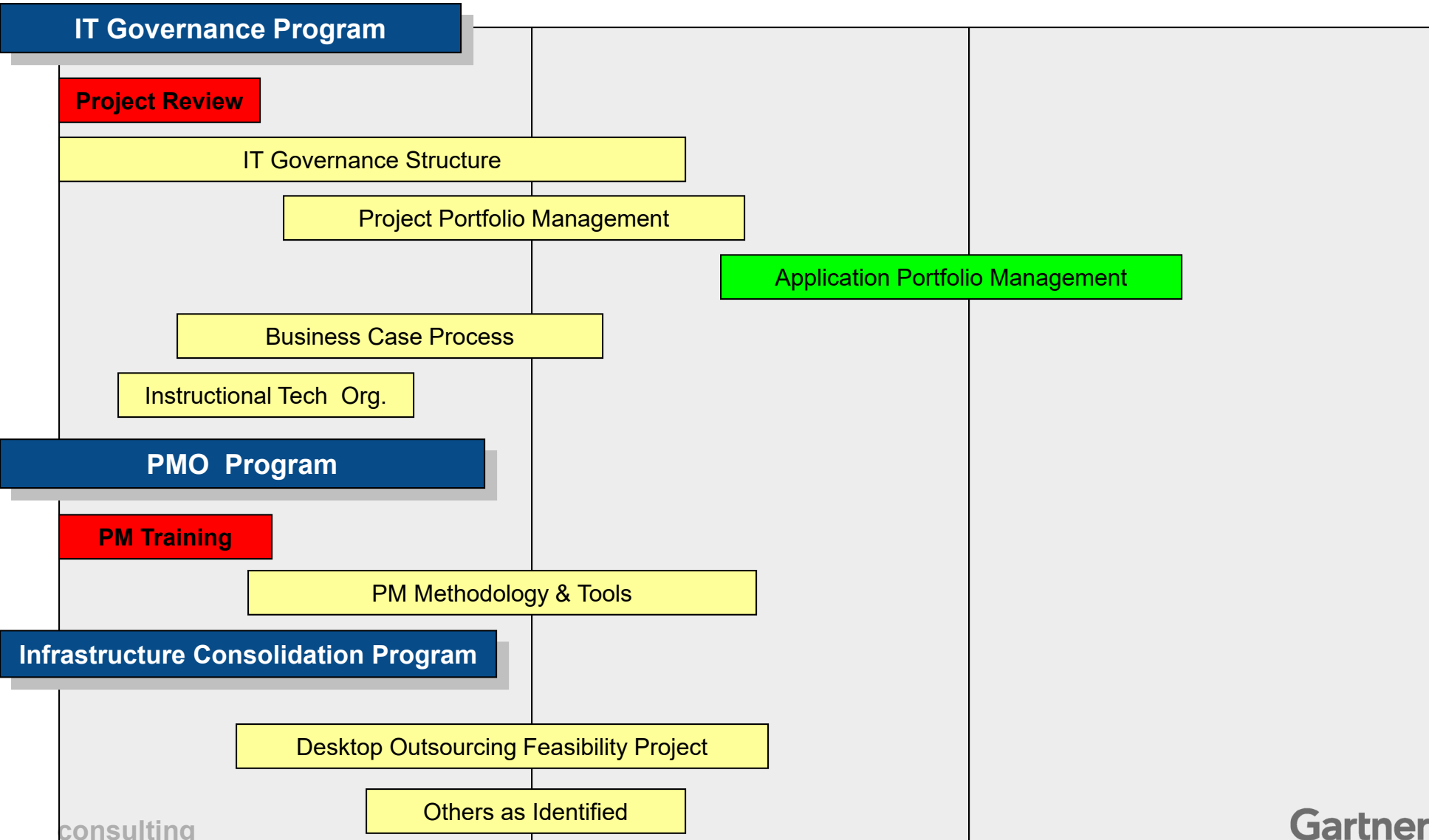
Implementation Roadmap

High Level Program and Project Road Map

Year 1

Year 2

Year 3



Implementation Roadmap

High Level Program and Project Road Map

Year 1

Year 2

Year 3

Disaster & Business
Continuity Program

OET Plan Development

School District Plan Development Project

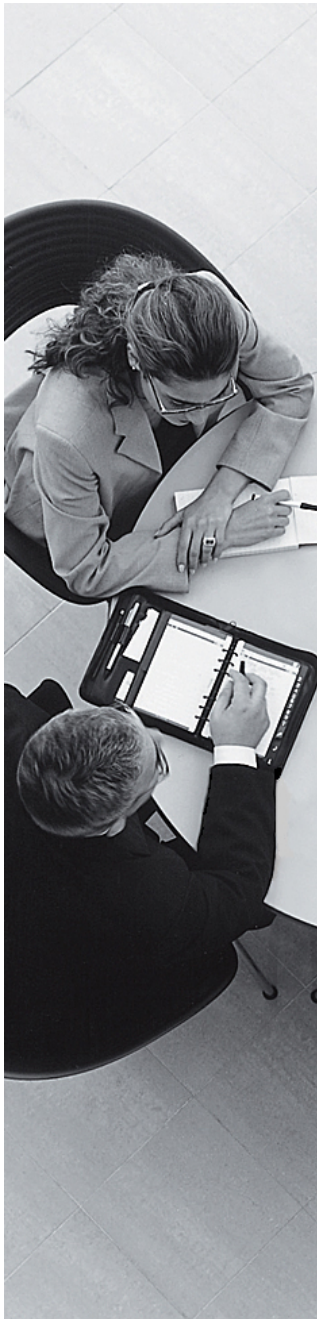
IT Shared Services Program

KDE Bus.Relationship Mgr.

Shared Services Communications

Service Definition

Sourcing Strategy



Appendix A

IT Cost Efficiency Benchmark Study Details (See Separate Document for This Appendix)

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