Visualizing the Value of IT

...People, Technology, Services, and Processes

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The Spellings Commission

“What we have learned over the last year makes clear that American higher education has become what, in the business world, would be called a mature enterprise: increasingly risk-averse, at times self-satisfied, and unduly expensive.”

A Test of Leadership: Charting the future of US Higher Education
Perceptions of IT…

Is information technology…

- A solution to the challenges that higher education faces;
- A contributor to the needed answers; or
- Just another cost and yet another cost center?

EDUCAUSE “Grand Challenges” Initiative
Brian L. Hawkins,
Annual Conference, 2006
KU Provost’s Challenge

- Questions posed to all KU departments:
  - Who are you?
  - What do you do?
  - Why is it important to KU?
Finding the Answers for IT…

Who are we?
- Mission / Vision Statements
- University Mission / Vision
- State Project Plan Filings
- Security Planning
- Project Planning
- State Technical Architecture

What do we do?
- Strategic Planning
- Board of Regents
- IS Division / Unit Planning
- University Budget Request
- Dept. / School Plans & Projects
- ITMBP
- Assessment
- State Regs / Oversight
- ITIL
- Project Portfolios
- Vendor Products / Changes
- Open Source Standards / Projects

Why are we important?
- What do we do?
- Why are we important?
- Who are we?
Where to Begin? Finding Models

- Need a systematic approach to answering questions about who, what, why, how, and where?

- Many models are available, but how can they work together to give a more complete picture?

  “You can’t redesign your system by dividing it into parts; everyone must look at the whole together.”

  Peter Senge (1994), *The Fifth Discipline Fieldbook*
## Models for Higher Education & IT

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Who Are We Working With?
Enterprise Business Partners Model

- Business Partners Model identifies the different organizations, groups, and individuals that the organization *interfaces* with during normal business operations.

- It articulates the different *inputs* that each organization receives from each business partner, and …

- …the *outputs* that each business partner receives from the organization.

Who are we working with?
Why Use a Business Partners Model

- Simple, usable model
- Shows communication streams
- Looks at communication in relation to the business
  - who are the contacts during normal business operations
  - what information is important to each group

Who are we working with?
# KU Enterprise Business Partners Model

<table>
<thead>
<tr>
<th>Business Partner</th>
<th>INPUT</th>
<th>OUTPUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students</td>
<td>Tuition Payments, Coursework, Enrollment Requests, Applications,</td>
<td>Bills, Grades, Enrollment Info, Transcripts, Financial Aid Information/Awards, Education, Student Environment</td>
</tr>
<tr>
<td></td>
<td>Financial Aid Requests</td>
<td></td>
</tr>
<tr>
<td>Parents of Students</td>
<td>Tuition Payments, Financial Aid Information</td>
<td>Bills, Student Environment</td>
</tr>
<tr>
<td>General Public</td>
<td>Requests for Information &amp; Service</td>
<td>General information on the University, Research Information, Service</td>
</tr>
<tr>
<td>System Vendors</td>
<td>Software Applications, Hardware, Bills, Bids, Contracts, Licenses,</td>
<td>Requests for Proposals, Fix Requests, Payments</td>
</tr>
<tr>
<td></td>
<td>Documentation, Training</td>
<td></td>
</tr>
<tr>
<td>Data Vendors</td>
<td>Bills, Bids, Contracts, Licenses, Documentation, Training, Data</td>
<td>Requests for Proposals, Fix Requests, Payments</td>
</tr>
<tr>
<td></td>
<td>Access, Books, Journals</td>
<td></td>
</tr>
<tr>
<td>Other Kansas Universities</td>
<td>Shared Planning Information</td>
<td></td>
</tr>
<tr>
<td>Federal Agencies</td>
<td>Research Grants, Financial Aid Funds</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Research Proposals, Reports, Compliance with Federal Regulations</td>
<td></td>
</tr>
<tr>
<td>State Agencies</td>
<td>Planning Information, Payroll Information, Regulations &amp; Policies</td>
<td>Research Information, Planning Information, Reports, Service</td>
</tr>
<tr>
<td></td>
<td>Research Information, Planning Information, Reports, Service</td>
<td></td>
</tr>
<tr>
<td>Contractors</td>
<td>Bids, Invoices, Status Reports</td>
<td>Requests for Bids/Proposals, Contracts, Plans, Change Orders, Payments</td>
</tr>
<tr>
<td></td>
<td>Requests for Bids/Proposals, Contracts, Plans, Change Orders, Payments</td>
<td></td>
</tr>
<tr>
<td>University of Kansas</td>
<td>Who are we working with?</td>
<td></td>
</tr>
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**Who are we working with?**
Models: What’s Next?

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Why Are We Doing It?

- Need a practical model to determine how IT adds value to:
  - Higher Education in general
  - Our University in particular

- Need a model that provides a:
  - High Level Business Model Focus
    - View University’s business goals as one enterprise
    - View overall processes rather than units & departments
  - Way to rationalize / prioritize applications and services
  - Performance Feedback / Assessment Model

Why are we doing it?
Enterprise Value Chain Model

- Porter’s Value Chain Model
  - Created by M.E. Porter
  - Competitive advantage is based on cost or differentiation or both

- Breaks down an industry or organization into a series of value-generating activities culminating in the total value delivered by an organization

Why are we doing it?
Enterprise Value Chain Model

- Uniform way of looking at all organizations, i.e. universities
- Gives organizations a better understanding of how different units function together
- Good starting point to think about how to meet goals
- Can show how IT enhances each link of the value chain
- Acts as a framework for Application Maps & Service Catalogs

Parts of the Value Chain:
- Primary Activities
- Support Activities
- Close to universal for every organization

Why are we doing it?
Value Chain: Porter’s Model

Why are we doing it?
# Primary Activity Components

<table>
<thead>
<tr>
<th>Porter’s Model</th>
<th>Higher Education Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inbound logistics: receiving &amp; warehousing of raw</td>
<td>Admissions</td>
</tr>
<tr>
<td>materials; distribution to manufacturing as needed</td>
<td>Enrollment</td>
</tr>
<tr>
<td></td>
<td>Research Proposals</td>
</tr>
<tr>
<td></td>
<td>Grants</td>
</tr>
<tr>
<td>Operations: process of transforming inputs into</td>
<td>Instruction</td>
</tr>
<tr>
<td>finished products and services</td>
<td>Counseling</td>
</tr>
<tr>
<td></td>
<td>Research</td>
</tr>
<tr>
<td></td>
<td>Research Admin.</td>
</tr>
<tr>
<td>Outbound logistics: warehousing and distribution</td>
<td>Graduation</td>
</tr>
<tr>
<td>of finished goods</td>
<td>Placement</td>
</tr>
<tr>
<td></td>
<td>Publication</td>
</tr>
<tr>
<td></td>
<td>Performance</td>
</tr>
<tr>
<td>Marketing and Sales: identification of customer</td>
<td>Recruitment</td>
</tr>
<tr>
<td>needs and generation of sales</td>
<td>Technology Transfer</td>
</tr>
<tr>
<td>Service: support of customers after products and</td>
<td>Academic support</td>
</tr>
<tr>
<td>services are sold to them</td>
<td>Service to Community</td>
</tr>
<tr>
<td></td>
<td>Alumni support</td>
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*Why are we doing it?*
Primary Activities: Other Aspects

- Process Management
- Core Activities:
  - Teaching
  - Research
  - Service
- Quality Management (of Core Activities)
- Product Information (University Infrastructure Assets)

Why are we doing it?
# Support Activity Components

## Porter’s Model

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<tr>
<td>Firm Infrastructure: organizational structure, control systems, company culture, etc.</td>
<td>Administration Management</td>
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<td></td>
<td>Financial Management</td>
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<tr>
<td>Human Resource Management: employee recruiting, hiring, training, development, and compensation.</td>
<td>HR Management</td>
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<td>Technology Development: technologies to support value-creating activities.</td>
<td>IT Management</td>
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<tr>
<td></td>
<td>Classroom Management</td>
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<tr>
<td></td>
<td>Research Resources Management</td>
</tr>
<tr>
<td>Procurement: purchasing inputs such as materials, supplies, and equipment.</td>
<td>Procurement Management</td>
</tr>
<tr>
<td></td>
<td>Physical Plant Management</td>
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<td>Support Asset Information</td>
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## Why are we doing it?

- Administration Management
- Financial Management
- HR Management
- IT Management
- Classroom Management
- Research Resources Management
- Procurement Management
- Physical Plant Management
- Support Asset Information
Value Chain: Higher Education (KU)

Why are we doing it?

Goals
- The mission of the University of Kansas encompasses teaching, research and service as well as an international dimension and humanitarian values.
- The transmission of information and knowledge to others
- The creation of information and knowledge
- The application of information and knowledge to benefit society

Customers
- Students
- Parents
- Alumni
- General Public
- Federal Government
- State Government
- Industry
- Professional Societies
- Research Communities
# Models: Next Steps?

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What Are We Doing?
Technology and the Value Chain

- Overall, technology is playing an ever greater role in business strategy
- Technology is embedded at every link of the value chain – but not always apparent
- How do we show technology’s importance to the value-generating activities of our organization?? How do we concretely show the value?

An Enterprise Application Map
Enterprise Application Map

- Enterprise Application Map - an extension of the value chain

- The Application Map seeks to categorize the applications and systems in an organization with links on the value chain.

- It is:
  - A business and technology hybrid model
  - High-level
Each application/system/etc. is placed on the appropriate area of the value chain.

- If it is used in multiple different functions, then put it in all of them that apply.

Really not much more to it than that - creating the value chain is the biggest hurdle.

What are we doing?
Why an Application Map?

- Allows units to see where each specific application fits in relation to the high-level business areas in the organization.
- Helps find gaps where IT does not have any / adequate applications in a particular business area.
- Helps show how pervasive technology is in the organization.
- Can be used to illustrate justification for IT spending.
- Starts the process to visually see IT / Business alignment.
# Models: Where to Next?

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Application Lists and Service Catalogs

- Historical approach to meeting individual / unit needs → separate applications (Application lists)

- ITIL Process Models
  - Recognizing interconnections between applications across the organization

- ITIL Service Catalog concept
  - Moving from Applications lists → Services lists
  - Merges value to campus with application groups through operational and service level contracts

What are we doing?
How Do We Manage It?

- ITIL service management concepts
- IT Portfolio management concepts
## Models: Almost There…

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Where Are We Going?
Strategic Planning Process

- Using these models, it becomes easier to focus on core institutional services and how IT can contribute

- Highlights gaps in services

- Provides foundation for strategic directions

- Provides basis for new service proposals
### Models: The Final Step

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How Do We Assess Progress?

- When planning any assessment activity, start by considering these four guiding questions:
  - What do we need to know?
  - Who can tell us?
  - How can we get the information?
  - What will it enable us to do?

- The models discussed position IT well to answer these questions.
Why Do Assessment?

- Benchmark current services and use data to improve efficiency and effectiveness.
- Measure users’ perceptions and satisfactions with services.
- Establish what services and resources are needed and desired.
- Increase dialogue with users.
Assessment Tools?

- EDUCAUSE Core Data Service
  ([http://www.educause.edu/apps/coredata](http://www.educause.edu/apps/coredata))
  - Provides comparison data about campus information technology environments and practices to help benchmark, plan for, and make decisions about campus IT services

- TechQual+ ([http://www.techqual.org](http://www.techqual.org))
  - Project to develop a scientifically reliable and valid instrument that can be adopted by all institutions of higher education to conduct assessments of technology services on their own campuses.
  - Modeled on the existing SERVQUAL, IS SERVQUAL, and LibQual+ approaches
Bringing It All Into Focus…

Where We Are

People / Technology / Services / Processes

Where We Want To Be

Value Chain

Application Maps, Service Catalogs

- Core Data Service
- TechQual+
- Other Qualitative and Quantitative Methods

ITIL Services Overlay

Assessment

Business Partners

INPUT

OUTPUT

- Tuition Payments, Coursework, Enrollment Requests, Applications, Financial Aid Requests
- Bills, Grades, Enrollment Info, Transcripts, Financial Aid Information/Awards, Education, Student Environment

- Tuition Payments, Financial Aid Information
- Bills, Student Environment

- Requests for Information & Service
- General information on the University, Research Information, Service
- Software Applications, Hardware, Bills, Bids, Contracts, Licenses, Documentation, Training

- Requests for Proposals, Fix Requests, Payments
- Bills, Bids, Contracts, Licenses, Documentation, Training, Data Access, Books, Journals

- Requests for Proposals, Fix Requests, Payments
- Shared Planning Information

- Planning Information, Payroll Information, Regulations & Policies
- Research Information, Planning Information, Reports, Service
- Bids, Invoices, Status Reports

- Requests for Bids/Proposals, Contracts, Plans, Change Orders, Payments
- Research Grants, Financial Aid Funds

- Research Proposals, Reports, Compliance with Federal Regulations
For More Information…

Thoughts? Questions?

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