Business Intelligence Approaches in Higher Ed & the Infrastructure Needed to Support Them: An Ohio Model

Tom Gaylord, VPCIO
The University of Akron

Ohio Association for Institutional Research & Planning
October 19, 2001
I. University of Akron July 7, 2000 BoT Approved 3-Year Enterprise System Plan

- Background on Decision to Address Enterprise Systems
  - Context
  - Hurdles
- Status of Effort to-Date
  - Short-Term
  - Long-Term
  - Achievements

II. Business Intelligence Defined

III. EPM Defined

IV. The Data Warehouse and Balanced ScoreCard
What's Happening: Ohio's Higher Ed Budget Decline

<table>
<thead>
<tr>
<th>Rank</th>
<th>Category</th>
<th>Dollar Change for Biennium FY02-03</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Natural Resources</td>
<td>$30,879,496</td>
<td>28.78%</td>
</tr>
<tr>
<td>2</td>
<td>Job &amp; Family Services</td>
<td>$1,469,305,825</td>
<td>20.49%</td>
</tr>
<tr>
<td>3</td>
<td>Development</td>
<td>$23,689,027</td>
<td>19.26%</td>
</tr>
<tr>
<td>4</td>
<td>Education</td>
<td>$988,344,960</td>
<td>16.00%</td>
</tr>
<tr>
<td>5</td>
<td>Administrative Services</td>
<td>$15,426,379</td>
<td>9.59%</td>
</tr>
<tr>
<td>6</td>
<td>Mental Retardation</td>
<td>$24,932,423</td>
<td>7.24%</td>
</tr>
<tr>
<td>7</td>
<td>Rehabilitation &amp; Corrections</td>
<td>$96,075,134</td>
<td>6.99%</td>
</tr>
<tr>
<td>8</td>
<td>Youth Services</td>
<td>$9,144,011</td>
<td>3.87%</td>
</tr>
<tr>
<td>9</td>
<td>Mental Health</td>
<td>$1,284,508</td>
<td>0.25%</td>
</tr>
<tr>
<td>10</td>
<td>Higher Education</td>
<td>($6,738,587)</td>
<td>-0.26%</td>
</tr>
</tbody>
</table>

...another - 6% coming
Ohio’s FA01 Tuition & Fees Increases

What's Happening:

- OSU 9.3%
- WSU 6%
- MU 8%
- UC 9.1%
- OU 8%
- KSU 6%
- UA 9.6%
- BG 8.1%
- UT 9%
- CSU 9%
- YSU 5.1%
What’s Happening:
Ohio’s Higher Ed Customer Perceptions

Yrs of Faculty Productivity Erosion:
- SCH
- Class Size
- Graduation Rates
- New Program Introduction
- Research

Yrs of Infrastructure Erosion
- Buildings
- Information Tech
- ERIPs
- Professional Staff
- Quality of Service
- Innovation

Source: Stamats, 2000
### Data Findings: FY01 IT Assets

<table>
<thead>
<tr>
<th></th>
<th>KSU</th>
<th>UA</th>
<th>YSU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Centralized IT Assets</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Main Processing Facility</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>PC's</td>
<td>5,210</td>
<td>5,000</td>
<td>4,167</td>
</tr>
<tr>
<td>Terminals</td>
<td>2</td>
<td>10</td>
<td>230</td>
</tr>
<tr>
<td>Total Annual Support Staff (Head Count)</td>
<td>214</td>
<td>58 (1)</td>
<td>61 (2)</td>
</tr>
<tr>
<td>Total Annual Support Staff (FTE)</td>
<td>187</td>
<td>41 (1)</td>
<td>54</td>
</tr>
</tbody>
</table>

Notes:
1. Akron currently has 8 full-time managerial positions open in their IT organization.
2. Media Services staff are not included in the support staff head count or FTE.
3. The IT staff figures include personnel in both the IT organization and other units.
4. All figures are rounded to the nearest whole number.
# Data Findings: FY01 Annual IT Cost Breakdown

<table>
<thead>
<tr>
<th></th>
<th>Kent State University</th>
<th>University of Akron</th>
<th>Youngstown State University</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Annual IT Costs:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Application Software Licensing/Maintenance</td>
<td>$1,226,000 17.7%</td>
<td>$ 590,527 13.7%</td>
<td>$ 595,711 14.0%</td>
</tr>
<tr>
<td>Hardware Costs</td>
<td>756,500 10.9%</td>
<td>124,624 2.9%</td>
<td>314,356 7.4%</td>
</tr>
<tr>
<td>Network Costs</td>
<td>160,000 2.3%</td>
<td>- 0.0%</td>
<td>49,020 1.2%</td>
</tr>
<tr>
<td>Outsourcing Costs</td>
<td>85,000 1.2%</td>
<td>- 0.0%</td>
<td>4,345 0.1%</td>
</tr>
<tr>
<td>Direct Labor Costs</td>
<td>4,206,351 60.8%</td>
<td>2,563,564 59.5%</td>
<td>3,091,684 72.9%</td>
</tr>
<tr>
<td>Overhead Costs</td>
<td>396,000 5.7%</td>
<td>- 0.0%</td>
<td>187,919 4.4%</td>
</tr>
<tr>
<td>Other IT Costs</td>
<td>83,000 1.2%</td>
<td>1,032,856 24.0%</td>
<td>- 0.0%</td>
</tr>
<tr>
<td><strong>Total Annual IT Costs</strong></td>
<td>$6,912,851</td>
<td>$4,311,571</td>
<td>$4,243,035</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>IT Critical Processes:</strong></th>
<th>Kent State University</th>
<th>University of Akron</th>
<th>Youngstown State University</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applications Development</td>
<td>$1,731,390 25.0%</td>
<td>$2,350,467 54.5%</td>
<td>$1,404,348 34.1%</td>
</tr>
<tr>
<td>Network Management</td>
<td>1,342,200 19.4%</td>
<td>25,559 0.6%</td>
<td>677,043 16.4% (1)</td>
</tr>
<tr>
<td>Security and Backup Services</td>
<td>178,053 2.6%</td>
<td>146,054 3.4%</td>
<td>164,445 4.0%</td>
</tr>
<tr>
<td>Help Desk Operations</td>
<td>348,718 5.0%</td>
<td>172,120 4.0%</td>
<td>202,058 4.9%</td>
</tr>
<tr>
<td>IT Operations and Scheduling</td>
<td>794,930 11.5%</td>
<td>1,325,585 30.7%</td>
<td>1,091,549 26.5%</td>
</tr>
<tr>
<td>Management of Support Technologies</td>
<td>2,517,560 36.4% (2)</td>
<td>291,786 6.8%</td>
<td>577,910 14.0%</td>
</tr>
<tr>
<td><strong>Total IT Critical Processes</strong></td>
<td>$6,912,851</td>
<td>$4,311,571</td>
<td>$4,117,353 (3)</td>
</tr>
</tbody>
</table>

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(1) YSU anticipates the annual maintenance network costs to increase from $63,529 in FY01 to $145,634 in FY02.
(2) KSU included labor and all hardware and software expenses in Management of Support Technologies. IT Operations and Scheduling only includes labor expenses.
(3) YSU total IT Critical Processes exclude $125,682 which was not allocated between the six processes for executive director, misc. overhead, and clerical student expenses which support the entire unit.
(4) UA labor costs impacted due to 8 open positions in the IT department.
(5) Network management costs are not easily segmented between administrative and academic computing; this may not reflect the true cost of network management.

Source: PricewaterhouseCoopers
### Data Findings: FY02 IT Staff and Services Assessment

“Resource constraints are viewed as the biggest impediment to improved services and greater customer satisfaction.”

<table>
<thead>
<tr>
<th>University</th>
<th>Customer Service</th>
<th>Skilled Practitioners</th>
<th>Resources (both people and money)</th>
<th>Innovation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kent State University</td>
<td>Very responsive; loyal, dedicated, understand user needs; reliable, stable systems</td>
<td>Strong skills to support old technology; understand both function and technology; outdated skills</td>
<td>Can’t afford to do everything we want; can’t do both projects and maintenance; difficult to attract new staff</td>
<td>Limited web service; lack of integrated programs, on-line signature ability</td>
</tr>
<tr>
<td>Youngstown State University</td>
<td>Respond quickly to customer needs; highly successful at what they do; lack a clear strategy and plan that will get us to future</td>
<td>Strong mainframe skills; built programs in-house; old skills need to be updated</td>
<td>Don’t have money to supplement staff; can only afford to do one project at a time and do maintenance</td>
<td>Not enough money for innovation; many paper-based systems; stand in line for new systems</td>
</tr>
<tr>
<td>University of Akron</td>
<td>Good support of new system rollouts; dedicated, talented, responsive; true collaboration with users; customer service suffers due to project focus</td>
<td>IT skills are spectacular; forward thinking; could improve communication within IT</td>
<td>Limited by money; cannot attract and keep IT staff; people are overworked and underpaid; limited cross-training</td>
<td>Greatest strength - at the cutting edge of technology</td>
</tr>
</tbody>
</table>

Source: PricewaterhouseCoopers
Hardware / Software / Communications / Services

- **INTERACTIVE**
  2005 - PCs incorporate TV, phone, & interactive video transmission

- **PERSONAL DIGITAL ASSISTANTS**
  2008 - hand-held PDAs more powerful than today’s PCs will be used by the majority of people to manage work and personal affairs

- **PARALLEL PROCESSING**
  2008 - supercomputers using massive parallel processing are common

- **BIOCHIPS**
  2015 - biochips that store data in molecular bonds are commercially available

Hardware / Software / Communications / Services

- **UBIQUITOUS COMPUTING ENVIRONMENT**
  2009 - embedded processors in common objects are integrated into the workplace and home

- **COMPUTER TRANSLATION**
  2012 - computers routinely translate languages in real time

- **MACHINE LEARNING**
  2012 - computer programs are commonly available that learn by trial and error in order to adjust their behavior

- **NEURAL NETWORKS**
  2015 - computations are commonly performed by neural networks using parallel processors
Hardware / Software / Communications / Services

- **STANDARD DIGITAL PROTOCOL**
  2006 - most communications systems in industrialized countries adopt a standard digital protocol

- **GROUPWARE SOLUTIONS**
  2007 - groupware systems are routinely used for simultaneously working and learning together

- **INFORMATION SUPERHIGHWAY**
  2008 - most people (80%) in developed countries access an information superhighway

- **BROADBAND NETWORKS**
  2009 – ATM/IP, fiber, etc., connect the majority of homes and offices
Hardware / Software / Communications / Services

- ENTERTAINMENT-ON-DEMAND
  2003 - news, movies, music etc. selected electronically on demand

- ELECTRONIC SALES
  2009 - half of all goods in America are sold via information services

- TELECOMMUNTING
  2015 - most people (80%) perform their jobs, at least partially, from remote locations by telecommuting

- DISTRIBUTED LEARNING
  2006 - on demand computerized teaching programs & interactive lectures, accessible across national boundaries, are common

- ONLINE PUBLISHING
  2007 - majority of books and publications are published online
eUniversities... brokering educational services over a web of connected organizations, sharing cost of delivery burdens.

**Traditional Model**
Business processes bounded by bricks & mortar

**Virtual Model**
Integrated business processes driven by
(1) secure access
(2) shared information &
(3) application service providers

**What’s Coming:**
Higher Ed’s Evolution, Adaptation, Transformation

- eUniversities
- Virtual Model
- Traditional Model
- Integrated business processes
- Secure access
- Shared information
- Application service providers
- Brick & mortar model
- Next Generation University
- Outsourced Applications
- Transport Service Providers
- Education Provider Partners
- Suppliers
- Communities of Interest
- Remote & Mobile Workers
- Global Locations
- Shared Students & Faculty
- Remote Locations
- Residences
- HR, Payroll, Finance
- Traditional University

**Students & Faculty**
**Suppliers**
**Partners**
From Analysis to INTELLIGENCE

- **Analysis:**
  detailed examination of the elements or structure of a substance, organization, etc; followed by statement as a result of this. (Oxford)

- **Intelligence Analysis:**
  systematic examination of the parts of a whole, in order to identify facts, and derive or infer key findings and conclusions, about their relationships and about the whole
Application of the Intelligence Process
- makes order of information chaos
- adds value to information for decisions

Key to Competitive Advantage

Varies Within/Amongst Organizations
- competitor intelligence
- market intelligence
- competitive intelligence
- business intelligence
What’s Coming: Business Intelligence Models

- **INTEGRATION**
- **STRATEGY**
- **MARKET INTELLIGENCE**
- **COMPETITOR INTELLIGENCE**
- **BUSINESS INTELLIGENCE (BI)**
- **COMPETITIVE INTELLIGENCE (CI)**
- **KNOWLEDGE MANAGEMENT (KM)**

**INNOVATION**

**INTEGRATION**
Timely, Fact-Based Information

reliable basis for decisions, strategies

Applicable in ALL Business Functions

quality of service / competitive advantage

Using BI, an Organization Can:
- realize ROI on IT
- describe the environment / operational context
- forecast future change
- challenge assumptions
- formulate the right questions
- identify & compensate for weaknesses
- implement & adjust strategy
- act on opportunities
What’s Coming:
The Service Environment

Changing Context

Subcontractors & Vendors

The Public

Regulators

Employees

Ed & Govt Partners
What’s Coming:
Input - Output

Internal Information

External Information

Internal Knowledge

External Knowledge

Analysis

10% Strategic Decision Support

20% Operational Senior, Mid-Mgmt

70% Tactical University-wide
Decision Maker

**Collection:**
- Internal <> External
- Information <> Knowledge

**Collation:**
- Storage <> Retrieval
- Evaluation <> Validation

**Analysis:**
- Forecasting Change, Options for Action

**Communication**

**Requirements**

*What’s Coming:*
*The Intelligence Cycle*
IT Dependent Business Intelligence is becoming a common enabling element.
Readying UA: Akron’s Game Plan

- Assessing Business Intelligence (BI) Pre-requisite Needs
  - Human and Technology Infrastructure
  - Enabling Role of IT

- Determining the Best BI Approach
  - Infrastructure
  - Enabling Role of IT

- First Year Achievements
  - Infrastructure
  - Enabling Role of IT
UA’s IT Hurdles: (1) Need to Address Fundamental IT Issues

- No UA Strategic Plan and Process that Supports Budget Requests via Critical Needs / Requirements / Achievement Measures / Mission
- Inadequate Central Administrative Systems Software
- Inadequate Central Administrative Systems Hardware
- Inadequate Network Backbone
- Data Hard to Get Due to Fragmented / Aged Infrastructure
- Poor Quality Data, No EDP Auditing of Strategic Data Integrity, Strategic Data Not Collected
- No Use of Professional Project Management Methodologies
- No Project-Based Cyclical (Formalized) Client Feedback
- Inadequate Project Funding and Follow-through
- Inadequate Leadership and Decision-Making - Needs Focused on Disconnected Short-Term, Incremental Changes
- Insufficient/Random Public/Private Sector Collaborations/Partnerships
- Inadequate IT Staff Compensation Due to Peerless Market Pressures
- Inadequate Staffing Levels = Poor Staff Morale + Staff Turnover
UA’s IT Hurdles:

(2) Need to Enhance IT’s Enabling Role

- No UA Strategic Plan and Process that Supports Budget Requests via Critical Needs / Requirements / Achievement Measures / Mission
- Aged / Inadequate / Disparate “Extended Enterprise” Infrastructure
- Inadequate Project Costing Mechanisms
- No Use of Professional Project Management Methodologies
- Inadequate Network / Server/ Client Management Software & Related Analysis Competence to Improve QoS Levels
- No Data Mining Tool Standard – Training & Sharing EoS Absent
- Insufficient Private Sector Collaborations/Partnerships
- Inadequate IT, DL & Network/Telecomm Policies, Regulations & Guidelines (also purchasing issues – no PC standards)
- No DL Room/Equip (Medina) Maintenance Funding Formula
- Little Synergy Among Network, Telcom & DL Technology Areas
- No Professional Development/Certification Program
- Inadequate Staffing Levels to Meet Anticipated Service Levels
Short-Term:
- Engage in a Merged Strategic and “Contextual” Planning Process that Supports Budget Requests via Achievement Measures
- Re-align Unit Functions and Staff
- Implement Professional Project Management Methodologies
- Conduct Cyclical Client-centric Assessments (2WAY)
- Develop Professional Skills Development Programs for Staff
- Develop Vendor Relationships to Improve Price Breaks
- Work to Improve Technology Funding Levels to an Adequate Level
- Better Integrate and Propose More Effective Relationships Between College and Centralized IT Service Providers

Long-Term:
- “In-House” Application Service Provider (ASP) Model for Shared IT Systems for NE Ohio Universities
- Develop Usage Fee / Income / Service Agreement Models
Short-Term:

- Engage in a Merged Strategic and “Contextual” Planning Process that Supports Budget Requests via Achievement Measures
- Re-align Enterprise Functions & Staff around Project Collaborations
- Begin Data to Information …to Knowledge Conceptual Framework
- Combine Business Intelligence and Competitive Intelligence with Information Technology Intelligence
- Begin “Know the Business” Professional Development Program for All Stakeholders & Improve End User Training Opportunities
- Develop Private Provider Relationships to Improve Access
- Develop greater eLearning developer capacity via faculty laptop program & buildup of Distance Learning productivity / training

Long-Term:

- Engage in a Merged Strategic and “Contextual” Planning Process that Drives and Supports Technology Investments via Short-Term Achievement Measures and Long-Term Outcomes Research
- Implement Activity-Based Budgeting Models
- Do More to Assist Faculty Research
Readying UA:

(1) Fundamentals First Year Achievements

- Developed 3-Year Enterprise Systems Plan – Trustees Funded
- Selected for PeopleSoft National Pilot for Rapid Deployment
- Developed a Detailed User Training Plan – cited by PeopleSoft
- Balanced ScoreCard Early Adopter – 2001 Implementation Target, National EPM SIG Leadership for 2001
- Shared Services Model – NEO Universities Drafting Finance/HR ERP Proposal for Regents
- Negotiated IBM Partnership for Enterprise Server, Storage / BU and Restore / UPS
- Redesigned UA Fact Book – cited Best in Ohio by NCA rep
- Started the Web-Enabled Data Warehouse Initiative
- Redesigned Infrastructure for Information Systems
- Redesigned Infrastructure for Institutional Planning
- Developed Market-Based Compensation Study for IT Positions
- Secured Support for Critical Technology, Software, & Staff Salaries
- Grants: Portal ($300k) 3rd Processor ($350k), Minority Laptops ($165k)
Readying UA:

(2) IT’s Enabling Role First Year Achievements

- Improved Dial-Up Access & Reliability
- Student Catchment Area Provided Local Call Access
- Rate Reduction for Long Distance Calls

- CISCO Backbone Retro-fit to Gigabit IP
  - 100mbps to EVERY desktop, 12 researchers to Gigabit IP
- Upgraded all inbound/outbound local trunks to fiber-based digital PRI circuits
- Ubiquitous Internet Access On-Campuses
  - Wireless Everywhere, +30 New Tech Enhanced Classrooms
- UPS Installed & Innovative Lights-off Power-On Plan
- IMAP4 Email & Internet Accessible Student Disk Storage

- TIVOLI Partnership – Enterprise Management Software H.Ed Evaluation
- IBM - Ubiquitous Laptops, 1st Ohio Public University ThinkPad U
- CISCO – 802.11a Wireless & 10 Gigabit IP Pilot / IP Telephony Pilot/ Ed Collab
- Built Distributed Learning High Speed Connectivity to KSU
- OSC Regional Office @UA / UA-Led OSC Hot Site Project
- UA-Time Warner Led Ohio Broadband Providers Initiative (OBEN)
- Campus Pipeline & WebCT Partnerships – PSoft Integration
- 2WAY Education Alliance Partnership - 1st University Partner

Lowest Common Denominator

Infrastructure Readiness

Strategic Innovation & Partnering
Akron’s Game Plan: The Re-Alignment

DRAFT RE-ALIGNMENT PLAN

AREA OVERVIEW

Version: 2000.05.30
Author: VP/CIO CORE Team
Akron’s Game Plan: Detailed Project Work Plan

**Build Matrix**

**SA, TG, TB** 5 days

**Tue 6/1/99** - **Mon 6/7/99**

**Choose Data Mart**

**TG, SA, TB** 10 days

**Tue 6/8/99** - **Mon 6/21/99**

**Choose Dimensions**

**DH, AL, SD, YM, TG** 0.6 days

**Tue 6/22/99** - **Tue 6/22/99**

**Develop Fact Table & Process Flow Diagrams (all but DDEF)**

**DH, SD, TG, CF** 5 days

**Tue 6/22/99** - **Tue 6/29/99**

**Document Fact Table Detail**

**DH, AL, SD, TG** 3 days

**Tue 6/29/99** - **Fri 7/2/99**

**Design Dimension Detail**

**DH, AL, SD, TG, YM** 1.6 days

**Fri 7/2/99** - **Tue 7/6/99**

**Develop Derived Fact Worksheet**

**DH, AL, SD, TG** 2 days

**Tue 7/6/99** - **Thu 7/8/99**

**User Review & Acceptance**

**TG, RD** 0.2 days

**Thu 7/8/99** - **Thu 7/8/99**

**Review DB Design Recommendations for EU Tool**

**TG, RD** 0.5 days

**Thu 7/8/99** - **Fri 7/9/99**

**Review DB Design DBMS Recommendations**

**SD, DH, AL, TG, RW, YM** 0.67 days

**Fri 7/9/99** - **Fri 7/9/99**

**Complete Logical Database Design**

**SD, YM** 1.5 days

**Fri 7/9/99** - **Tue 7/13/99**

**Identify Candidate Prestored Aggregates**

**DH, SD, TG** 1.33 days

**Tue 7/13/99** - **Wed 7/14/99**

**Develop Aggregation Table Design Strategy**

**SD, DH, TG** 0.4 days

**Wed 7/14/99** - **Wed 7/14/99**

**Review Logical Database Design w/Team**

**SD, TG, TB, DH, AL, CF, MS, YM** 0.44 days

**Thu 7/15/99** - **Thu 7/15/99**

**Certify DB Design with DSS Tool Vendor**

**CF, TG** 0.2 days

**Thu 7/15/99** - **Thu 7/15/99**

**ANALYZE CJB DATA SOURCES**

**8.33 days**

**Thu 7/8/99** - **Tue 7/20/99**

**Identify Candidate Data Sources**

**TG, TB, DH, SD** 0.63 days

**Thu 7/8/99** - **Fri 7/9/99**

**Browse Data Content**

**TA, RW, SD, MS, DH, MM** 4 days

**Fri 7/9/99** - **Thu 7/15/99**

**Develop Source to Target Data Map (no DDEF Team help)**

**DH, SD, RW, MS** 2.5 days

**Thu 7/15/99** - **Mon 7/19/99**

**Estimate Number of Rows**

**SD, DH** 1 day

**Mon 7/19/99** - **Tue 7/20/99**

**User Acceptance/Project Review**

**TG, RD** 0.2 days

**Tue 7/20/99** - **Tue 7/20/99**

**CJB ETL STAGING DESIGN & DEVELOPMENT**

**35.28 days**

**Tue 7/20/99** - **Wed 9/8/99**

**Design High Level Staging Process**

**DH, SD, RW** 2.67 days

**Tue 7/20/99** - **Fri 7/23/99**

**Develop Detailed Staging Plan by Table**

**SD, DH** 3 days

**Fri 7/23/99** - **Wed 7/28/99**

**Under DBA Set Up Development Environment**

**DH, RW** 1.5 days

**Wed 7/28/99** - **Fri 7/30/99**

**Define & Implement Staging Metadata**

**DH, RW** 4 days

**Fri 7/30/99** - **Thu 8/5/99**

**Develop 1st Static Dimension Table Process (Extract, Transformation & Load)**

**DH, RW** 1.5 days

**Thu 8/5/99** - **Fri 8/6/99**

**Develop 1st Dimension Maintenance Process**

**DH, RW** 1.5 days

**Fri 8/6/99** - **Tue 8/10/99**

**Develop Remaining Dimension Table Processes**

**DH, SD** 3 days

**Tue 8/10/99** - **Fri 8/13/99**

**Develop Fact Table Process (Extract, Transformation & Load)**

**SD, DH, RW** 2 days

**Fri 8/13/99** - **Tue 8/17/99**

**Develop Incremental Fact Table Process**

**SD, DH, RW** 1 day

**Tue 8/17/99** - **Wed 8/18/99**

**Design & Implement Data Cleansing**

**SD, AL, DH, MS** 2 days

**Wed 8/18/99** - **Fri 8/20/99**

**Design & Develop Aggregation Process**

**SD, AL, DH** 2 days

**Fri 8/20/99** - **Tue 8/24/99**

**User Acceptance/Project Review**

**TG, CF, MM, RD** 0.5 days

**Fri 8/27/99** - **Fri 8/27/99**

**Automate Entire Process**

**DH** 6 days

**Tue 8/24/99** - **Wed 9/1/99**

**Develop Data Quality Assurance Processes**

**AL** 1 day

**Mon 9/6/99** - **Mon 9/6/99**

**DBA Implements DB Administration**

**SD** 1 day

**Tue 9/7/99** - **Tue 9/7/99**

**User Acceptance/Project Review**

**TG, RD** 0.2 days

**Fri 9/8/99** - **Fri 9/8/99**

**CJB Iteration 1 Completed**

**0.1 days**

**Fri 9/8/99** - **Fri 9/8/99**

**POPULATE & VALIDATE CJB DATA MART**

**17.1 days**

**Wed 9/8/99** - **Fri 10/1/99**

**Set Up Production Environment**

**SD, DH, RW** 2 days

**Wed 9/8/99** - **Fri 9/10/99**

**Re-Load Test Data**

**SD, DH** 1 day

**Mon 9/20/99** - **Tue 9/21/99**

**Perform Data Validation/Quality Assurance**

**AL** 4 days

**Tue 9/21/99** - **Mon 9/27/99**

**Re-Load CJB Data Mart Data**

**SD, DH** 1 day

**Mon 9/27/99** - **Tue 9/28/99**

**Perform Data Validation/Quality Assurance**

**AL** 1 day

**Tue 9/28/99** - **Wed 9/29/99**

**User Acceptance/Project Review**

**TG, RD** 0.2 days

**Fri 10/1/99** - **Fri 10/1/99**

**CJB Iteration 1 Completed**

**0.1 days**

**Fri 10/1/99** - **Fri 10/1/99**
ROI

Strategic Information, Balanced Scorecard

Activity-Based Budgeting

eBusiness Web Applications

Business Intelligence

Data Warehouse & MIS

eLearning, Courseware Content Mgr

Network Operating System

Firewall / Security, System Monitoring, Tuning

Wireless Laptops

Collaboration Software

CORE PeopleSoft Applications

Backbone Data Network

Telecom / OBEN /Cable Wireless

UPS / Backup / PowerOn

Enterprise Hardware

Data Admin Standards Data Audit

Akron’s Game Plan:
Plan Dependencies

Return on Investment
FY04

Deliverables
FY03

Applications
FY02

Infrastructure
FY01

eBusiness

Web Applications

Network Operating System

Backbone Data Network

Telecom / OBEN /Cable Wireless

UPS / Backup / PowerOn

Enterprise Hardware

Data Admin Standards Data Audit
<table>
<thead>
<tr>
<th>Phase I DSL/Cable Broadband Partnerships</th>
<th>Net/Telecom to IP Telephony</th>
</tr>
</thead>
<tbody>
<tr>
<td>GB IP Infrastructure</td>
<td>10 GB IP Infrastructure</td>
</tr>
<tr>
<td>802.11b Wireless – New Buildings</td>
<td>802.11a Wireless</td>
</tr>
<tr>
<td>Bluetooth</td>
<td>Wireless WAN</td>
</tr>
<tr>
<td>Banyan Out / Win2k Srv In</td>
<td>Central Srv Farm</td>
</tr>
<tr>
<td>Netscape Out / Exchange 2000</td>
<td>Server XP</td>
</tr>
<tr>
<td>Win2K PC Migration</td>
<td>Exchange XP</td>
</tr>
<tr>
<td>Install Pipeline</td>
<td>Win XP PC Migration</td>
</tr>
<tr>
<td>Campus Pipeline v3.0</td>
<td>New Client OS</td>
</tr>
<tr>
<td>WebCT Std</td>
<td>Campus Pipeline v4.0</td>
</tr>
<tr>
<td>WebCT/PeopleSoft Integration</td>
<td>WebCT Next Gen</td>
</tr>
<tr>
<td>Install PeopleSoft SA 7.6</td>
<td>Install Grants</td>
</tr>
<tr>
<td>Install PeopleSoft FA 7.5</td>
<td>Install Devel &amp; Bud Planning 7.6</td>
</tr>
<tr>
<td>Install EMP Data Warehouse</td>
<td>Install Balanced ScoreCard</td>
</tr>
<tr>
<td>Market ASP Rationale</td>
<td>Upgrade to FA/HR 8.x / 9.x</td>
</tr>
<tr>
<td>Install Pipeline</td>
<td>Market Phase II ASP Rationale</td>
</tr>
<tr>
<td>Campus Pipeline v3.0</td>
<td>Phase I Pilot – 2/4 Institutions w/ERP – FA/HR</td>
</tr>
<tr>
<td>WebCT Std</td>
<td>Phase II – Security + Extend</td>
</tr>
<tr>
<td>WebCT/PeopleSoft Integration</td>
<td>Maintenance</td>
</tr>
<tr>
<td>Install PeopleSoft SA 7.6</td>
<td>Phase I to All Srv</td>
</tr>
<tr>
<td>Install PeopleSoft FA 7.5</td>
<td>Phase III – Next Gen Tivoli ?</td>
</tr>
</tbody>
</table>
Akron’s Game Plan: Strategic Measures & Institutional Effectiveness

Enterprise Warehouse

Data Warehouse
- Strategy
- Process
- Workforce
- Customers

Data Marts

DecisionMaster

EW Metadata

Data Acquisition

PeopleSoft Applications
External Data Sources
ERP Applications
Legacy/OLTP Applications

Workforce Analytics
Activity Based Management
Profitability Mgmt for FSI

Balanced Scorecard
Customer Scoring

Applications

Workbenches
- Merchandise Management
- Supply Chain Management
- Financial Management
- Workforce Analysis
- Project Analysis
- Customer Profitability
- Enrollment Management
Enterprise Data Warehouse

Data Structure

Meta Data

Atomic Level Data

Atomic Level Data Structure

Operational Systems (Systems of Record)

Data Acquisition Programs

Secondary Acquisition Programs

Data Mart Submission

Data Structure

DW Archived Data

DW End User Access Tool(s)

DW Information Users

Dept Data

Access Tool

Data Mart

Users

Operational Systems

Data Information

Data

Information

Akron’s Game Plan: The Data Warehouse
Organizational Structure:
Project Management Team Structure

- **Steering Committee**
- **Business Sponsors**
- **Data Definitions (DDEF) Team Leader**
- **Extract, Transform, Load (ETL) Team Leader**
- **Business Intelligence (BI Tool) Team Leader**
- **Database Administrator (DBA) Team Leader**

Akron’s Game Plan:
The Data Warehouse
Implementation Details:
Detail Task Management Structure
Implementation Details:
Detail Task Management Structure
Implementation Details: DW Life Cycle

- Technical Architecture Design (ITSD)
- Product Selection & Installation
- End-User (BI) Application Specification
- End-User (BI) Application Development
- Data Staging Design (ETL) & Development
- Physical Design (DBA)
- Dimensional Modeling (DBA)
- User Requirement & Data Definitions Review (DDEF)
- Project Planning

Akron’s Game Plan: The Data Warehouse

Each Data Warehouse Iteration is Expected to Take 4 to 6 Months
## Balanced ScoreCard Defined

### Organization Effectiveness

A comparison of results achieved to goals intended  

......Luis Proenza

The process of articulating the mission, setting goals, and using data to form assessments in an ongoing cycle of goal setting, planning, and evaluation  

......Peter Ewell

### The Balanced Scorecard

Translates an organization’s mission and strategy into a comprehensive set of performance measures that provides a framework for a strategic measurement and management system  

......Kaplan and Norton
 Akron’s Game Plan:  
The Balanced ScoreCard

VISION
What is our vision, mission and goals and does everyone in the University understand them?

INSTITUTIONAL OUTCOMES
To fulfill our mission, what University outcomes must be achieved?

CONSTITUENCY SATISFACTION
To achieve our OUTCOMES, what constituency needs must we serve and how well are we serving these needs?

INTERNAL PROCESSES
To serve our constituencies well, at what internal processes must we excel?

LEARNING & INNOVATION
To excel at these processes, how must our University learn and innovate?

...Translating this Strategy into Operational Terms
Balanced ScoreCard Strategy & Effectiveness

The successful strategy execution approach must be...

- Simple / visual
- Consistent / reproducible
- Embrace historical, current and futures attributes
- Data-driven
- Integrate with the budget
- Measure what counts
- Measure what we can count
- Benchmarked
- Highly Configurable
Robert Kaplan and David Norton, in their Harvard Business Review articles, identified the rationale and developed an approach for a “balanced” perspective of organizational performance.

Balanced ScoreCard Defined
As a strategy execution approach, a Balanced Scorecard helps...

- Structure how to access and link appropriate data by providing a disciplined framework for driving strategy across the entire Ministry.

- Clarify and communicate strategic goals effectively Ministry-wide by linking them to KPIs.

- Define complex institutional effectiveness calculations consistently -- ensures consistent application of metrics.
Balanced ScoreCard Defined

Key attributes of an Effective Performance Management System...

- Linkage to strategy
- Multiple perspectives
- Cascading (drill-down) objectives & measures
- Trend data
- Objectives & measures linked to initiatives
- Graphic representation of results
- Communication of objectives, measures & results throughout the Ministry
Akron’s Game Plan: The Balanced ScoreCard

Balanced ScoreCard Defined
... a Framework to Build STRATEGY-FOCUSED ORGANIZATIONS

- Mobilize Change through Executive Leadership
  - Mobilization
  - Governance Process
  - Strategic Management

- Translate the Strategy to Operational Terms
  - Strategy Maps
  - Balanced Scorecards

- Align the Organization to the Strategy
  - Corporate Role
  - Business Unit Synergies
  - Support Unit Synergies

- Make Strategy a Continual Process
  - Link Budgets & Strategy
  - Strategic Learning
  - Analytics & Information Systems

- Make Strategy Everyone’s Job
  - Strategic Awareness
  - Personal Scorecard
  - Balanced Paychecks
Balanced ScoreCard Defined

**Financial Perspective**
- **Demand / Expansion Strategy**
  - Build the Franchise
  - New Revenue Services
- **Productivity Strategy**
  - Increase Client Value
  - Client Profitability / Effectiveness
  - Cost per Unit
- **Shareholder Value**
  - ROCE
- **Product Utilization**
  - Asset Utilization

**Client Perspective**
- **Client/Service/Enforcement Value Proposition**
  - Quality
  - Price
  - Time
  - Function
  - Service
  - Relations
  - Brand
- **Acquisition**
- **Retention**
  - Profitability / Effectiveness
- **Product Leadership**
- **Client Intimacy**

**Internal Perspective**
- **“Build the Franchise”**
  - (Innovation Processes)
- **“Increase Client Value”**
  - (Customer Management Processes)
- **“Achieve Operational Excellence”**
  - (Operations & Logistics Processes)
- **“Become a Good Neighbor”**
  - (Regulatory & Environmental Processes)

**Learning & Growth Perspective**
- **A Motivated and Prepared Workforce**
  - Strategic Competencies
  - Strategic Technologies
  - Climate for Action
Balanced ScoreCard Design Approach

A 10-Step Process:

1. Develop/confirm institutional vision & mission
2. Confirm/adapt Balanced Scorecard perspectives
3. Agree upon common definitions
4. Develop objectives for each perspective
5. Formulate and link objectives by cause/effect relationship
6. Determine performance measures, targets, and initiatives
7. Distinguish between lag and lead performance measures
8. Cascade objectives and measures from enterprise to teams/individuals
9. Develop actual and target performance measures by teams/individuals
10. Monitor performance and target areas for improvement
Balanced ScoreCard Design Approach Steps 1-3

What outcomes we are trying to achieve to accomplish our mission?

Perspective One: Institutional Outcomes

What knowledge and skills are critical to our success and how do we learn as an organization?
Perspective Four: Learning & Innovation

What are our key processes and how well do we execute these processes?
Perspective Three: Internal Business Processes

What services are most important to key constituencies and how well are we doing in providing these services?
Perspective Two: Constituency Satisfaction

1. Confirm Mission, vision, goals
2. Confirm perspectives
3. Agree to definitions

Akron’s Game Plan: The Balanced ScoreCard

Mission, Vision & Goals

What are we trying to achieve to accomplish our mission?

1. Confirm Mission, vision, goals
2. Confirm perspectives
3. Agree to definitions

Akron’s Game Plan: The Balanced ScoreCard

What knowledge and skills are critical to our success and how do we learn as an organization?

Perspective Four: Learning & Innovation

What are our key processes and how well do we execute these processes?

Perspective Three: Internal Business Processes

What services are most important to key constituencies and how well are we doing in providing these services?

Perspective Two: Constituency Satisfaction

What outcomes we are trying to achieve to accomplish our mission?

Perspective One: Institutional Outcomes

Mission, Vision & Goals
Akron’s Game Plan: The Balanced ScoreCard

Balanced ScoreCard Design Approach Step 4

4. Develop objectives for each perspective

Perspective One: Institutional Outcomes
- Improve Institutional Assessments
- Increase Placements
- Increase Funding

Perspective Two: Constituency Satisfaction
- Increase Client Satisfaction
- Increase Employer Satisfaction

Perspective Three: Internal Business Processes
- Facilitate the scheduling process
- Develop alternative service processes
- Integrate and streamline services

Perspective Four: Learning & Innovation
- Provide innovation incentives
- Increase technical skills
- Improve client relations skills

Mission, Vision & Goals

Mission,
Vision & Goals
Balanced ScoreCard Design Approach Step 5

5. Link objectives by cause/effect relationship

- Improve Assessments
- Increase Funding
- Increase Placements
- Increase satisfaction with services
- Increase employer satisfaction
- Facilitate Job Placement
- Develop alternative learning delivery processes
- Integrate & Streamline services
- Improve client relations skills
- Increase skills in use of technology
- Provide innovation incentives & resources

Outcomes Perspective
Constituency Perspective
Internal Process Perspective
Learning & Innovation Perspective

Akron’s Game Plan: The Balanced ScoreCard
## Akron’s Game Plan: The Balanced ScoreCard

### Balanced ScoreCard Design Approach Step 6

- **Objective**: How success in achieving the objective will be measured and tracked.
- **Target**: The level of performance or rate of improvement needed.
- **Initiatives**: Key action programs required to achieve objectives.

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Objective</th>
<th>Measure</th>
<th>Target</th>
<th>Initiatives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Placement Process</td>
<td>Application to placement time</td>
<td></td>
<td>Reduction of 25%</td>
<td>Implement &amp; integrate job placement system</td>
</tr>
<tr>
<td></td>
<td>Placement Rates</td>
<td></td>
<td>Increase of 25%</td>
<td>Redesign recruiter program</td>
</tr>
<tr>
<td></td>
<td>Starting Salaries</td>
<td></td>
<td>Increase of 10%</td>
<td></td>
</tr>
<tr>
<td>Constituency</td>
<td>Increase constituency satisfaction</td>
<td>Assessments of importance/satisfaction</td>
<td>95% in critical processes/services</td>
<td>Redesign Web pages for easier access to information</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Decrease # of process steps</td>
<td></td>
</tr>
<tr>
<td>Process</td>
<td># of complaints/compliments</td>
<td>Reduce by 50%</td>
<td></td>
<td>New training program and resources</td>
</tr>
<tr>
<td></td>
<td># of training hours</td>
<td>Increase by 50%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learning &amp; Growth</td>
<td>Client relations skills</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Technical skills</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Balanced ScoreCard Design Approach Step 7

**Objective | Lag Measure | Lead Measure**
---|---|---
Increase Assessments | Yearly trends of rankings | Selectivity, Client demand, Funding mix
Increase constituency satisfaction | Client satisfaction | Admissions Pool, Alumni contributors
Placement Process | Time to placement | Number of new employers participating in service
Develop client relations skills | # of clients using Placement services | Number of first time users of services

7. Distinguish between lag and lead performance measures.
A University scorecard defines overall strategic priorities & context.

Each Campus develops a long-range plan and scorecard consistent with the University’s objectives.

Administration

- Policy Programs
- Enforcement Programs
- Rehab Programs

Support Services

- Teams and Individuals

8. Cascade objectives from enterprise to teams/individuals

A University scorecard defines overall strategic priorities & context.

Each Support Unit develops a scorecard to support services to Clients & internal constituencies.

Departments, teams and individuals develop scorecards consistent with the University’s objectives.
## Akron’s Game Plan: The Balanced ScoreCard

### Balanced ScoreCard Design Approach Step 9

<table>
<thead>
<tr>
<th>Category</th>
<th>Actual</th>
<th>Target</th>
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</thead>
<tbody>
<tr>
<td><strong>Increase Client Satisfaction</strong></td>
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<tr>
<td>Job placements</td>
<td>70%</td>
<td>85%</td>
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<tr>
<td>Number of recruiters</td>
<td>45</td>
<td>75</td>
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<tr>
<td>Number of job openings</td>
<td>400</td>
<td>600</td>
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<tr>
<td>Starting salaries</td>
<td>$35,000</td>
<td>$40,000</td>
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<tr>
<td>Follow-up survey results</td>
<td>55%</td>
<td>70%</td>
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<tr>
<td>Alumni giving per graduate</td>
<td>$100.00</td>
<td>$200.00</td>
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<tr>
<td><strong>Streamline &amp; Integrate Processes</strong></td>
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<td></td>
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<tr>
<td>Number of transactions</td>
<td>10</td>
<td>5</td>
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<tr>
<td>Number of approvals</td>
<td>4</td>
<td>1</td>
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<tr>
<td>Process completion time</td>
<td>60 min</td>
<td>10 min</td>
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<tr>
<td>Number of exceptions</td>
<td>25</td>
<td>5</td>
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<tr>
<td><strong>Expand Professional Development</strong></td>
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<tr>
<td>Client relations training</td>
<td>0</td>
<td>20hrs</td>
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9. Develop actual and target performance measures

Determine Support Service team’s actual & target performance measures
Balanced ScoreCard Design Approach Step 10

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>University</th>
<th>Campus</th>
<th>Program</th>
<th>Department</th>
<th>Support Services</th>
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<tbody>
<tr>
<td>Assessments</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Constituency</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Client Satisfaction Ratings</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internal Process</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Alternative learning delivery</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Job placement</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learning &amp; Innovation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Professional development</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

10. Monitor performance trends and target areas for improvement

Organizational area needing attention

Perspective needing attention
Balanced ScoreCard Design Approach Step 10

Akron's Game Plan: The Balanced ScoreCard

<table>
<thead>
<tr>
<th>Increase Client Satisfaction</th>
<th>Nov 99</th>
<th>Dec 99</th>
<th>Jan 00</th>
<th>Feb 00</th>
<th>Mar 00</th>
<th>Apr 00</th>
</tr>
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<tbody>
<tr>
<td>Job Placement rates</td>
<td>▼</td>
<td>▼ ▲</td>
<td>▲ ▼ ▲</td>
<td>▲ ▼ ▲</td>
<td>▼ ▲</td>
<td></td>
</tr>
<tr>
<td>Number of recruiters</td>
<td>▲ ▼ ▲</td>
<td>▲ ▼ ▲</td>
<td>▼ ▲ ▼</td>
<td>▼ ▲ ▼</td>
<td>▼ ▲ ▼</td>
<td></td>
</tr>
<tr>
<td>Number of job openings</td>
<td>▼ ▲ ▼</td>
<td>▼ ▲ ▼</td>
<td>▲ ▼ ▼</td>
<td>▼ ▲ ▼</td>
<td>▼ ▲ ▼</td>
<td></td>
</tr>
<tr>
<td>Starting salaries</td>
<td>▼ ▲ ▼</td>
<td>▼ ▲ ▼</td>
<td>▲ ▼ ▼</td>
<td>▼ ▲ ▼</td>
<td>▼ ▲ ▼</td>
<td></td>
</tr>
</tbody>
</table>

Trends tell the story

Job Placement Services currently has two initiatives to address the identified problems.
Where should we target our actions?

Balanced Scorecard Design Approach Step 10

- **Outcome**
  - Increase Assessments
  - Improve Placement

- **Constituency**
  - Client Satisfaction Measures
  - Employer Satisfaction Measures
  - Improve Job Placement Process/opportunities

- **Internal Processes**
  - Increase Access to Information

- **Learning & Innovation**
  - Train in Client Relations
## Balanced Scorecard: Leveraging Technology

### Enterprise Performance Management

**Balanced Scorecard**

**Owner:**  Fields, Julia  
**Begin Date:**  04/01/2000  
**Responsible:**  Fields, Julia  
**End Date:**  04/30/2000

---

### Financial Perspective

<table>
<thead>
<tr>
<th>Metric</th>
<th>Scorecard</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Admin Costs Compared to Total</td>
<td>Mesa</td>
<td></td>
</tr>
<tr>
<td>Admin Costs Compared to Total</td>
<td>Sagebrush</td>
<td></td>
</tr>
<tr>
<td>Admin Costs per Resource</td>
<td>Mesa</td>
<td></td>
</tr>
<tr>
<td>Admin Costs per Resource</td>
<td>Sagebrush</td>
<td></td>
</tr>
<tr>
<td>Revenue from Operations</td>
<td>Mesa</td>
<td></td>
</tr>
<tr>
<td>Revenue from Operations</td>
<td>Sagebrush</td>
<td></td>
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</tbody>
</table>

---

### Customer Perspective

<table>
<thead>
<tr>
<th>Metric</th>
<th>Scorecard</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Prospect Conversion Rate</td>
<td>Mesa</td>
<td></td>
</tr>
<tr>
<td>Prospect Conversion Rate</td>
<td>Sagebrush</td>
<td></td>
</tr>
<tr>
<td>Internet Usage</td>
<td>Mesa</td>
<td></td>
</tr>
<tr>
<td>Internet Usage</td>
<td>Sagebrush</td>
<td></td>
</tr>
<tr>
<td>Nbr of New Customers per Resource</td>
<td>Mesa</td>
<td></td>
</tr>
<tr>
<td>Nbr of New Customers per Resource</td>
<td>Sagebrush</td>
<td></td>
</tr>
</tbody>
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### Internal Perspective

<table>
<thead>
<tr>
<th>Metric</th>
<th>Scorecard</th>
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<tbody>
<tr>
<td>Process Time for Exp Reports</td>
<td>Mesa</td>
<td></td>
</tr>
<tr>
<td>Process Time for Exp Reports</td>
<td>Sagebrush</td>
<td></td>
</tr>
<tr>
<td>Nbr of Rpts Processed per FTE</td>
<td>Mesa</td>
<td></td>
</tr>
<tr>
<td>Nbr of Rpts Processed per FTE</td>
<td>Sagebrush</td>
<td></td>
</tr>
</tbody>
</table>

---

### Learning & Growth Perspective

<table>
<thead>
<tr>
<th>Metric</th>
<th>Scorecard</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Admin Voluntary Separations</td>
<td>Mesa</td>
<td></td>
</tr>
<tr>
<td>Admin Voluntary Separations</td>
<td>Sagebrush</td>
<td></td>
</tr>
</tbody>
</table>

---
Balanced ScoreCard: Leveraging Technology

Enterprise Performance Management

Balanced Scorecard

View by Perspective

Owner: Fields, Julia
Begin Date: 04/01/2000
Responsible: Fields, Julia
End Date: 04/30/2000

Financial Perspective

Admin Costs Compared to Total
Mesa

Admin Costs Compared to Total
Sagebrush

Admin Costs per
Mesa

Admin Costs per
Sagebrush

Revenue from
Mesa

Revenue from
Sagebrush

Customer Perspective

Prospect Conversion Rate
Mesa

Prospect Conversion Rate
Sagebrush

Internet Usage
Mesa

Internet Usage
Sagebrush

Graduation Rate
Mesa

Graduation Rate
Sagebrush

Internal Perspective

Process Time for Exp Reports
Mesa

Process Time for Exp Reports
Sagebrush

Nbr of Rpts Processed per FTE
Mesa

Nbr of Rpts Processed per FTE
Sagebrush

Learning & Growth Perspective

Admin Voluntary Separations
Mesa

Admin Voluntary Separations
Sagebrush

< Previous | 1-6 of 8 | Next >
Akron’s Game Plan: The Balanced ScoreCard

Balanced ScoreCard: Leveraging Technology

KPI Dimension: 
KPI Owner: Fields, Julia

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Accounting Period</th>
<th>Assessment</th>
<th>Resolved Value</th>
<th>Target % of Target</th>
<th>% Change</th>
<th>LY Resolved Value</th>
<th>QTD Value</th>
<th>YTD Value</th>
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Akron's Game Plan: The Balanced ScoreCard

Balanced ScoreCard: Leveraging Technology

<table>
<thead>
<tr>
<th>Balanced Scorecard</th>
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</thead>
<tbody>
<tr>
<td>View Portfolio</td>
</tr>
<tr>
<td>Owner: Fields, Julia</td>
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<tr>
<td>Responsible: Fields, Julia</td>
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Strategy Component | Component Type | Perspective | Scorecard Scorecard |
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<tr>
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<tbody>
<tr>
<td>Institution Vision</td>
<td>Vision</td>
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</tr>
<tr>
<td>ST-Strengthen Financial Base</td>
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<tr>
<td>CSF-Reduce Admin Costs</td>
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<td>CSF-Increase Rev from Aux Serv</td>
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<td>ST-Ensure Success</td>
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<tr>
<td>CSF-Recruit Effectively</td>
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<td>CSF-Retain Staff</td>
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<tr>
<td>ST-Streamline Internal Process</td>
<td>Thrust</td>
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<tr>
<td>CSF-Streamline Travel &amp; Exp</td>
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<td>Internal</td>
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<tr>
<td>CSF-Streamline Purchasing Proc</td>
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<tr>
<td>ST-Retain Staff</td>
<td>Thrust</td>
<td>Learning</td>
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<tr>
<td>CSF-Increase Satisfac</td>
<td>CSF</td>
<td>Learning</td>
<td></td>
</tr>
<tr>
<td>CSF-Increase Admin Satisfac</td>
<td>CSF</td>
<td>Learning</td>
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</tbody>
</table>
Akron’s Game Plan: The Balanced ScoreCard

Balanced ScoreCard: Leveraging Technology

- Increase Internet Usage
- Retain Admin Staff
  - Increase Admin Job Satisfaction
  - Increase # of Req’s and Expense Rpts Handled Per FTE
  - Reduce Process Time for Req’s and Expense Rpts
  - Reduce Administrative Costs
- Increase Prospect Conversion Rate
Akron’s Game Plan: The Balanced ScoreCard

Balanced ScoreCard: Leveraging Technology
Balanced ScoreCard: Leveraging Technology

Akron’s Game Plan: The Balanced ScoreCard
What to look for in a BSC product vendor...

1. Follows Kaplan and Norton framework
2. Certified by the Balanced Scorecard Collaborative
3. Steered by a customer advisory board
4. Pure internet solution
5. Contains pre-packaged metrics driven by easy to modify business rules
6. Prototypes deployed in less than 1 week
7. Scorecards cascaded to individual employees - personalized targets
8. Targets can be future dated
9. Automatic out-of-tolerance alerts
Enterprise Performance Management

Sources

- Legacy ERP
- Flat File
- External Data
- Existing Census Data
- UA’s Informatica ETL

Akron’s Enterprise Warehouse

- Warehouse Tables:
  - Client
  - People
  - Financial
  - Facilities etc
  - Process

- Data Enrichment
- Analytic Applications
- Analytic Forecasting

Delivery

- Cube Manager
- Brio Enterprise Reporting Tools
- List Reports
- OLAP Cubes
- ROLAP Cubes
- ROLAP Content
- Workbenches - Subject-Based Packaged Content

Enterprise Warehouse Administrator

Data Mart(s)

Financial, Facilities etc

Enterprise Performance Management

DW / BI / BSC / EPM Discussion
“The EPM architecture is an outstanding implementation of data warehouse... The users of EPM will have a solid foundation on which to build for years to come. The EPM Architecture meets all the criteria for data warehousing and information processing in flying colors.”

William H. Inmon
The “Father of Data Warehousing”
April 2000
"The Balanced Scorecard is one of the seminal ideas and management practices of the past 75 years"

Editors, Harvard Business Review
Business Intelligence Approaches in Higher Ed & the Infrastructure Needed to Support Them: An Ohio Model

Tom Gaylord, VPCIO
The University of Akron

Ohio Association for Institutional Research & Planning
October 19, 2001