ITS Executive Steering Committee (ITESC)

Agenda and Materials
October 24, 2013

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Agenda

- ATC Update
  - Carol Scheidenhelm
- BCDR Update
  - Dan Vonder Heide, Kevin Smith
- Demo of Financial Aid BI
  - Nancy Merz, Pauline Mc Kinney

Academic Technologies Committee

Fall 2013 Updates

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Membership

Browning, Melissa	**Institute of Pastoral Studies**	**Diane Maloney**
Jules, Tavis	**School of Education**	**Leanne Kallemeyn**
Faught, James	**School of Law**	**Mike Lonero**
Greer, Aaron	**School of Communication**	**Chen, Jamason**
Malliaris, Mary	**Quinlan School of Business**	**Nenad Jukic**
Horowitz, Jessica	**Grad. Sch./Research Serv.**	**Bill Sellers**
Hoyt, Amy	**School of Medicine**	**Susan Crowell**
Hupert, Anne	**College of Arts and Sci.**	
Joslin, Jeremy	**Sch. Cont. & Prof. Studies**	**Jeanne Widen**
Philip Hong	**School of Social Work**	**John Orwat**
Montes, Bruce	**Academic Tech. Services**	**Tim Walker** **Jack Corliss**
O'Connor, Holly	**School of Nursing**	**Stacy Zurick**
Pankratz, David	**College of Arts and Sci.**	
Parsi, Kayhan	**Bioethics**	**Bob Johnson**
Scheidenhelm, Carol (chair)	**Academic Affairs**	**Moy, Terry** **Ashton, Ruth (secretary)**
Seal, Robert	**University Libraries**	**Hong Ma (mid-October)**
Vonder Heide, Dan	**Info. Tech. Services**	**Jeff Apa**

Project Overview

- Subcommittee provided input on
  - Video Repository Pilots
  - Lecture Capture with Panopto
  - Adobe Connect survey
  - Clicker technology
  - Potential new technologies (Eduroam)
- Atomic Learning
- Outlook updates

Projects of Interest

- Policies around Twitter/Tweet Archives
  - And other social media
- Assist with Data Steward processes
- Common policies and procedures at university level
  - Units do not want to create their own in conflict with university
- Promotion of Lync features

Agenda

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- Demo of Financial Aid BI
  - Nancy Merz, Pauline Mc Kinney

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IT Business Continuity and Disaster Recovery (BCDR)

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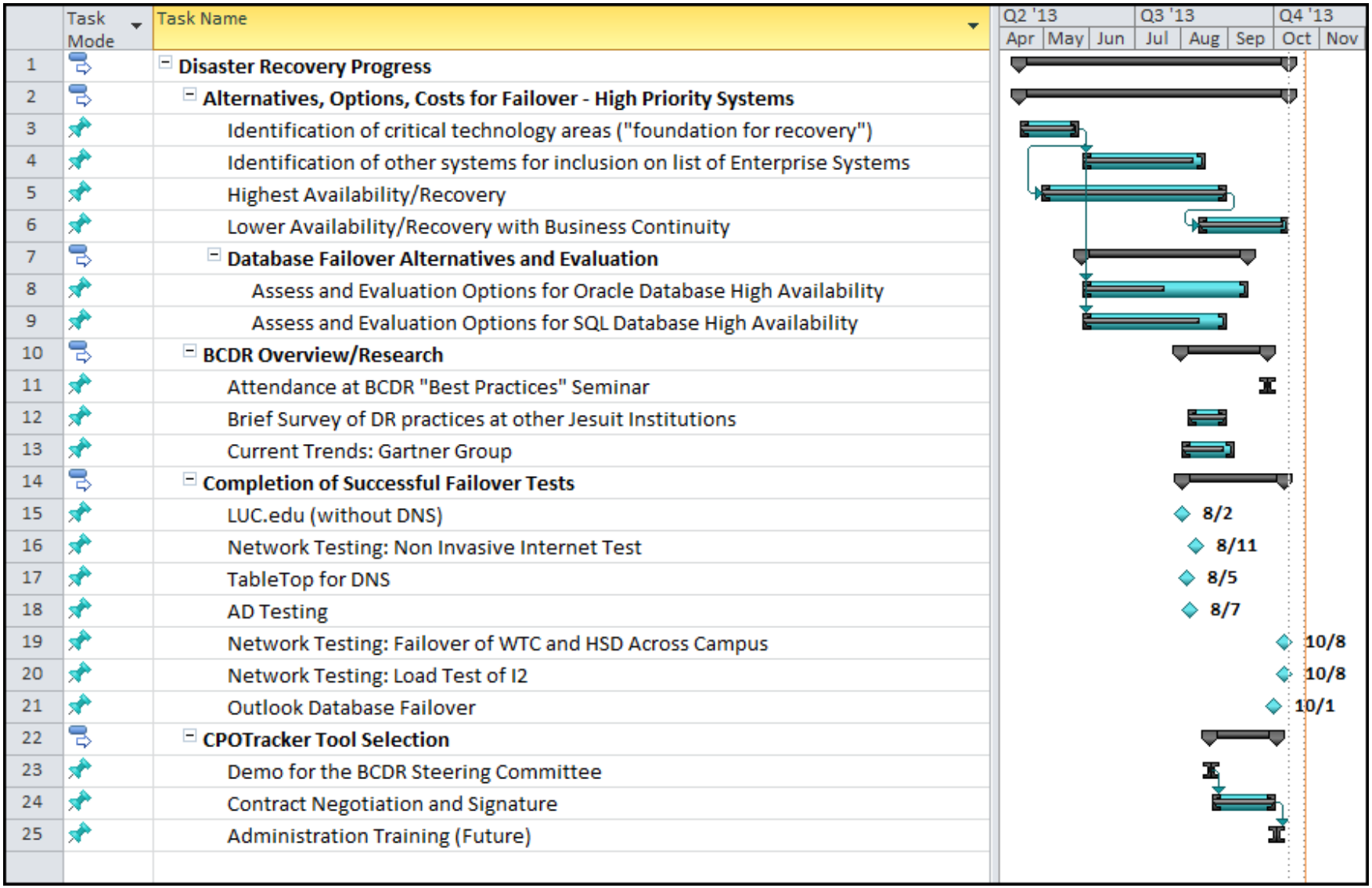
Agenda

- Progress Made Since our Last Review
- Disaster Recovery LUC Campus Overview
- Recovery Time Objectives – Review and Considerations
- Options/Costs for Recovering Highest Priority Systems
- Recommendations/Next Steps

Three Related University Efforts

Today's Discussion focuses on Disaster Recovery

Progress Made Since our Last Review



	Task Mode	Task Name
1		**Disaster Recovery Progress**
2		**Alternatives, Options, Costs for Failover - High Priority Systems**
3		Identification of critical technology areas ("foundation for recovery")
4		Identification of other systems for inclusion on list of Enterprise Systems
5		Highest Availability/Recovery
6		Lower Availability/Recovery with Business Continuity
7		**Database Failover Alternatives and Evaluation**
8		Assess and Evaluation Options for Oracle Database High Availability
9		Assess and Evaluation Options for SQL Database High Availability
10		**BCDR Overview/Research**
11		Attendance at BCDR "Best Practices" Seminar
12		Brief Survey of DR practices at other Jesuit Institutions
13		Current Trends: Gartner Group
14		**Completion of Successful Failover Tests**
15		LUC.edu (without DNS)
16		Network Testing: Non Invasive Internet Test
17		TableTop for DNS
18		AD Testing
19		Network Testing: Failover of WTC and HSD Across Campus
20		Network Testing: Load Test of I2
21		Outlook Database Failover
22		**CPOTracker Tool Selection**
23		Demo for the BCDR Steering Committee
24		Contract Negotiation and Signature
25		Administration Training (Future)

Loyola's Disaster Recovery

Current Primary Focus

- Current IT DR plan is focusing on a complete and extended outage for Dumbach
  - Fire, Flood, Tornado (most likely)

- Other IT levels of recovery will likely be required for other types of outages as part of business continuity, for example, Pandemic and a weather related outage for several buildings

Loyola's DR Risk at LSC Campus

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Loyola's DR Risk at WTC Campus

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Loyola's BCDR at HSD Campus

- Discussions are underway to coordinate the LSC/WTC business continuity efforts with HSD
- Disaster Recovery plan for HSD data center exists and is being tested
- LUC ITS and HSD are evaluating further redundancy/backup for the HSD data center and HSD network

Review of Key Definitions

Recovery Point Objectives

The RPO represents how much lost data will be acceptable to users. Simply stated: “How much data can a department re-create or re-enter?”

Recovery Time Objectives

The RTO is defined as how much time you are able to work without having access to an application.

Mandatory Technologies

Technologies that are foundational to the recovery of key applications; assumptions made for each mandatory technology will affect RTOs and RPOs for key applications.

Highest Priority Processes for Continuity

- Communicate and Safety
- Teach
- Support Students on Campus (e.g. Res Life)
- Recruit, Admit, Enroll
- Pay
- Administrative Processes

System priority/recovery should support high priority processes

Recovery Time Objectives*

Business Systems	Rank	1 Day-Critical	1 Day-Phase 2	2 Days-1 Week	1 Week or Greater	No Opinion
Network Services (Core, DNS, AD, VPN)	M					
Storage Services (SAN)	M					
Enterprise Database Services (Oracle, SQL, LuWARE, WebFocus[1])	M					
LUC.edu Website	1	4	0	2	0	0
eMail (Exchange)	2	3	2	1	0	0
Student System (PS Campus Solutions), including Portal	3	3	1	0	0	2
Learning Mgmt (Sakai LMS)	4	2	1	1	0	2
Adobe Connect	5	2	1	1	0	2
Lawson (people info, payroll, financials)	6	2	0	2	0	2
Kronos (timekeeping, payroll feed)	7	2	0	2	0	2
Phone and Voice Mail Systems (Avaya)	8	0	3	3	0	0
eCommerce System (CBORD, Micros)	9	0	4	0	0	2
Building Access (Maxxess, Easy Lobby)	10	0	2	2	1	1
Student System Reporting (PS RDS)	11	1	0	2	1	2
Payment Gateway (TouchNet Paypath/TPG)	12	0	2	1	1	2
Alumni/Donor Relations (Advance)	13	0	1	2	2	1
Student Recruiting (SLATE)	14	0	1	2	1	2

1 WebFocus technology required for key interface technology

Recovery Time Objectives*

Business Systems	Rank	1 Day-Critical	1 Day-Phase 2	2 Days-1 Week	1 Week or Greater	No Opinion
Room & Event Scheduling (R25 Suite, Kinetics, Outlook)	15	0	1	2	1	2
Student Loan Mgmt. (ECSI)	16	0	1	1	2	2
Parking (Maxxess, DataPark)	17	0	1	1	2	2
Admitted Student Portal (Custom)	18	0	1	1	2	2
Classroom Control System (Crestron)	19	0	1	0	3	2
Surveillance Systems (Milestone)	20	0	1	0	3	2
Mobile Applications (Blackboard, Custom)	21	0	0	4	0	2
Housing (RMS)	22	0	0	3	1	2
Wellness Center (Point and Click)	23	0	0	3	1	2
Enterprise Content Mgmt (DocFinity)	24	0	0	3	1	2
LUC Libraries (Voyager)	25	0	0	3	1	2
Predictive Dialing (SmartCall)	26	0	0	1	4	1
Student ePortfolio (Taskstream LAT)	27	0	0	1	3	2
Course/Faculty Evaluations (Snap, Opinio)	28	0	0	1	3	2
Faculty Salary Planning (Custom)	29	0	0	0	4	2
Staff Salary Planning (Custom)	30	0	0	0	4	2

Legend:
Mandatory: Infrastructure that must be recovered first
Denotes a Hosted System

*** From the March,2013 ITESC meeting**
Numbers reflect number of LUC business areas requiring recovery in that time frame

Disaster Recovery – Considerations

We have found that 1 Day Recovery may not be reasonable or required for Loyola:

- Recovery likely can be achieved at lower costs (combining BC and DR)
- Not representative of other university recovery objectives (e.g. Marquette, Fordham, Cornell, Northwestern)
- Likely cannot be achieved in the event of a "real" disaster
- Best practices: "Tiers" of Recovery

The Business Continuity Process will identify other key departmental systems:

- ITS will participate in the Business Continuity planning process to work with the departments to identify a recovery strategy for these systems.

Planning and Testing for disaster recovery is an ongoing process:

- Additional Enterprise Systems will be added/updated over time
- Depending on testing and business continuity, additional investment can shorter recovery times if required

Options for DR: High Priority Systems

See Supplemental Handout Materials

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	Highest Availability/Recovery (RTO: 1-3 Days)			Alternative Option: Longer Recovery with Business Continuity Requirements (RTO: 1-5 Days)			
Disaster Recovery: Mandatory and High Priority Applications	**One-Time Cost**	**Potential Data Loss**	**Capacity**	**One-Time Cost**	**Potential Data Loss**	**Capacity**	**Impact of Alternative Option**
Mandatory Infrastructure							
Network Failover (Network failover within the LSC)	$ 785,000	NA	TBD	$ 785,000	NA	TBD	**Potentially may be phased (1-3 years) Network recovery on LSC dependent on the timing of the phases:** Phase 1: $405K Total, South LSC Campus • ATT Pop $150K, Router $50K, Security $50K, Fiber $90K, Wireless $50K, Network $15K Phase 2: $250K Total, Northeast LSC Campus • Bridges $75K, Fiber $120K, Fiber $35, Network $10K Phase 3: $140K Total, Northwest Campus • Fiber $120K, Wireless $15K, Network $5K Does not cover: Steam plant, Dumbach, and Cudahy Science
DNS Failover	$ 103,875	None	100%	$ 103,875	None	100%	• Domain Name System (DNS) serves as the phone book for the Internet for each person by translating human-friendly computer hostnames into IP addresses. • ITS recommends high availability option for both alternatives in order to achieve high failover/availibility for LUC.edu, Sakai and other high enter priority applications.
Oracle Database Failover/Recovery	$ 604,500	<30 min	100% Lawson, Kronos, Locus, Advance	$ 111,000	<1 hr (Lawson, Kronos, Locus only) 4-6 hrs (all other Oracle applications)	• Lawson, Kronos, Locus : 75%-80% • All other Oracle based systems: 50-80%	• See database capacity impact under Locus, Lawson, Kronos and Advance applications below • All other Oracle applications (Admitted Student, Housing, ECM, Voyager, SmartCall, Salary Planning at 50% and may be slower during peak periods) • Business Continuity Plans required for elongated processing for: Student Enrollment, Res Life, and Payroll and Key Administrative Functions to support elongated system processing times (particularly in high peak periods, for example, student move in)

	Highest Availability/Recovery (RTO: 1-3 Days)			Alternative Option: Longer Recovery with Business Continuity Requirements (RTO: 1-5 Days)			
Disaster Recovery: Mandatory and High Priority Applications	**One-Time Cost**	**Potential Data Loss**	**Capacity**	**One-Time Cost**	**Potential Data Loss**	**Capacity**	**Impact of Alternative Option**
SQL Database Failover/Recovery	$ 54,000	<10 min	100% Adobe, T4, Maxxess, Micros	$ 16,000	<1 hr	Adobe, T4, Maxxess: 90-100%	• See database capacity impact underAdobe, Maxxess • Assumption is that Business Continuity processes will be developed around delay in T4 recovery, building access and surveillence systems
Phone System Failover	$ 78,000	NA	NA	$ -	NA	NA	• Limited number of key phone numbers, including main phone number, to be redirected to WTC (will take 2-4 days) • Cell phones used as primary phone communications - service will be poor due to cell phone usage • Business Continuity Plans will include potential relocation of LSC personnel to WTC if required • Solution does not include failover for emergency phones.
Total Costs (Mandatory)	**$ 1,625,375**			**$ 1,015,875**			

	Highest Availability/Recovery (RTO: 1-3 Days)			Alternative Option: Longer Recovery with Business Continuity Requirements (RTO: 1-5 Days)			
Disaster Recovery: Mandatory and High Priority Applications	**One-Time Cost**	**Potential Data Loss**	**Capacity**	**One-Time Cost**	**Potential Data Loss**	**Capacity**	**Impact of Alternative Option**
High Priority Applications							
T4 Failover/Recovery	$ 15,000	4-6 hrs	$ 1	$ 3,000	<24 hrs	90-100%	• Assuming network availability, there will be access to LUC.edu to make changes within 30 minutes using more technical update technology. • Current content via T4 will be available within 24 hours. • Ability for new content via T4 in 2-4 days. • Emergency Response communications and Business Continuity plan to confirm adequacy of this recommendation for T4
Locus Failover/Recovery	$ 74,000	<30 min	100%	$ 49,000	<30 min	70-80%	• Locus processing for student record management including: enrollment data, curriculum, academic advising, grade storage, student self-service, degree verification, transcripts will take 30-40% longer • Business Continuity plans will need to be formulated for slower processing and/or deferred processing, including manual workarounds, during peak periods
Adobe Failover/Recovery	$ 7,500	<30 min	100%	$ 7,500	<24 hrs	80%-90%	• Confirmation of the use of Adobe or identification of alternative technologies (other than Sakai) required during the Business Continuity Planning process. • Assumption is that Adobe and Sakai are the key components for delivery of teaching
Kronos Failover/Recovery	$ 7,000	< 30 min	100%	$ -	<1 hr	40%-50%	• Timecard processing will take up to 50% longer. • Business Processes to confirm elongated periods (or alternative methods for collecting timecard data)
Lawson Failover/Recovery	$ 7,000	< 30 min	100%	$ 7,000	<1 hr	70-80%	• Payroll, HR and Accounting functions will take 20-30% longer • Recommendation is that the Business Process planning determine overall priority of processing and priorities within the Lawson software to support the elongated processing times.

	Highest Availability/Recovery (RTO: 1-3 Days)			Alternative Option: Longer Recovery with Business Continuity Requirements (RTO: 1-5 Days)			
Disaster Recovery: Mandatory and High Priority Applications	**One-Time Cost**	**Potential Data Loss**	**Capacity**	**One-Time Cost**	**Potential Data Loss**	**Capacity**	**Impact of Alternative Option**
CBORD, Micros Failover/Recovery	$ 97,000	< 30 min	100%	$ 70,500	24-48 hrs	80-90% for CBORD only	• No Credit Cards Accepted (Decouple CBORD and Micros) • Acquire 21 readers to be located at 9 eating locations. These readers will need to be physically configured after the outage occurs. • All food charges will be via food plans, cash or check • This option eliminates the requirement for a separate secure network
Maxxess Failover/Recovery	$ -	<30 min	100%	$ -	NA	NA	• WTC door access with existing security settings will be available after there is network access. Local door readers (eRoms) will still work but no changes can be made and all reporting will be lost (particularly significant during move-in, move-out periods) • Without network access, there will be no security on dorm and other doors • Recommend personnel be stationed at doors w/ manual sign-in for dorms and all other key buildings (to be validated or rejected during the business planning process) • Full recovery with adds/changes to be available 10-15 days after full network is recovered
RDS/EDW Failover/Recovery	$ -	NA	NA	$ -	Locus loss data	60-70%	• ED and /RDS will be available 12-18 hrs after Locus is available • Data loss will reflect Locus data loss
Advance Failover/Recovery	$ 8,500	none	100%	$ 5,500	<1 hr	50%	• Overall priority of Advance recovery to be confirmed by the ITESC, including recovery time required • Recommendation is for a fairly low recovery time with 50% capacity (transactions to take twice as long in general).
Total: High Priority Applications	**$ 216,000**			**$ 142,500**			
Grand Total	**$ 1,841,375**			**$ 1,158,375**			
Total, including Contingency (20%)	**$ 2,209,650**			**$ 1,390,050**			

Recovery Time Objectives

Business Systems	Rank	Tier 1 (1-5 Days)	Tier 2 (6-10 Days)	Tier 3 (>10 Days)
Network Services (Core, DNS, AD, VPN)	M			
Storage Services (SAN)	M			
Enterprise Database Services (Oracle, SQL, LuWARE, WebFocus[1])	M			
LUC.edu Website	1	4	2	0
eMail (Exchange)	2	3	1	0
Student System (PS Campus Solutions), including Portal	3	3	0	0
Learning Mgmt (Sakai LMS)	4	2	1	0
Adobe Connect	5	2	1	0
Lawson (people info, payroll, financials)	6	2	2	0
Kronos (timekeeping, payroll feed)	7	2	2	0
Phone and Voice Mail Systems (Avaya)	8	3	3	0
eCommerce System (CBORD, Micros)	9	4	0	0
Building Access (Maxxess, Easy Lobby)	10	2	2	1
Student System Reporting (PS RDS)	11	0	2	1
Payment Gateway (TouchNet Paypath/TPG)	12	2	1	1
Alumni/Donor Relations (Advance)	13	1	2	2
Student Recruiting (SLATE)	14	1	2	1

[1] WebFocus technology required for key interface technology

Recovery Time Objectives

Business Systems	Rank	Tier 1 (1-5 Days)	Tier 2 (5-10 Days)	Tier 3 (>10 Days)
Room & Event Scheduling (R25 Suite, Kinetics, Outlook)	15	1	2	1
Student Loan Mgmt. (ECSI)	16	1	1	2
Parking (Maxxess, DataPark)	17	1	1	2
Admitted Student Portal (Custom)	18	1	1	2
Classroom Control System (Crestron)	19	1	0	3
Surveillance Systems (Milestone)	20	1	0	3
Mobile Applications (Blackboard, Custom)	21	0	4	0
Housing (RMS)	22	0	3	1
Wellness Center (Point and Click)	23	0	3	1
Enterprise Content Mgmt (DocFinity)	24	0	3	1
LUC Libraries (Voyager)	25	0	3	1
Predictive Dialing (SmartCall)	26	0	1	4
Student ePortfolio (Taskstream LAT)	27	0	1	3
Course/Faculty Evaluations (Snap, Opinio)	28	0	1	3
Faculty Salary Planning (Custom)	29	0	0	4
Staff Salary Planning (Custom)	30	0	0	4

Legend:
Mandatory: Infrastructure that must be recovered first
Denotes a Hosted System

Recommendations/Next Steps

1. Agree to tiers for Recovery Time:
   - ✓ Tier 1 Systems: 1-5 Days
   - ✓ Tier 2 Systems: 6-10 Days
   - ✓ Tier 3 Systems: After Tier 1 and Tier 2 Systems

2. Proceed with funding/approval for the Disaster Recovery "Alternative" - two staffing/delivery options for completing Tier 1:
   - ✓ Option 1: Investment of $1.4MM (current IT staffing): 24-30 months
   - ✓ Option 2: Investment of $1.8-2.0 MM (external consulting to supplement IT resources): 12-24 months

3. Recognize and budget for ongoing operational costs

Agenda

- ATC Update
  - Carol Scheidenhelm
- BCDR Update
  - Dan Vonder Heide, Kevin Smith
- Demo of Financial Aid BI
  - Nancy Merz, Pauline Mc Kinney

Data Warehouse
Business Intelligence Project
Financial Aid Demo

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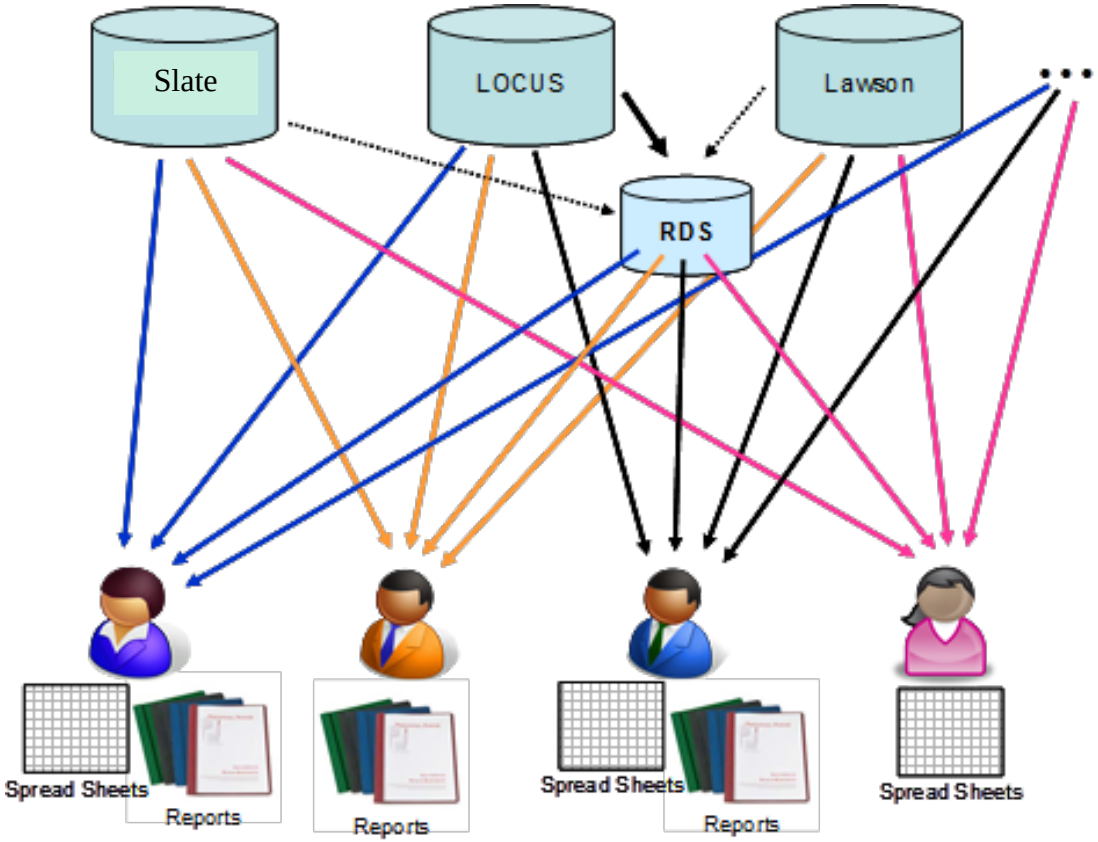
Agenda

- Before/After Scenarios
- Modules in the Data Warehouse
  Project Status
- Demo of Student Portfolio
- Discussion/Next Steps

Before Data Warehouse



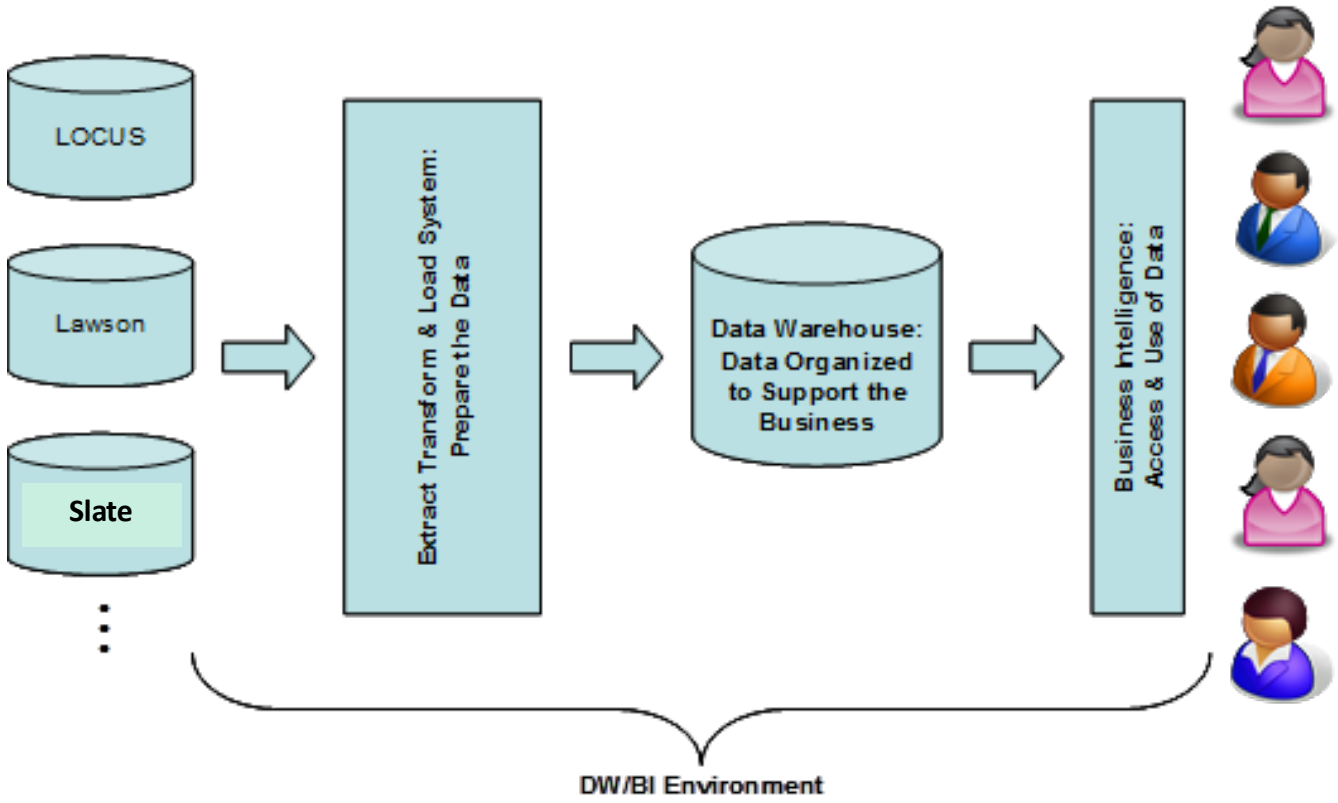
Current Challenges:
- Data not easily accessible.
- Need data from multiple systems
- No history or point in time snapshots (i.e. 10th Day Reporting)

Pulling Data:
- Some pre-built reports
- Need to know who/where to get data
- Get data one source at a time

Integrating Data:
- Individual
- Manual
- Case by Case Basis
- Results are inconsistent

Output:
- Static – not interactive
- Time/Resource Intensive
- Can't Drill into Detail Directly

After Data Warehouse



Mitigates Challenges:

- Data more easily accessible from centralized source
- Improved historical and snapshot data availability for trending and forecasting

Pulling data is Simplified:

- Centralized data (migrating to single source)

Integrating Data:

- Consistent data definitions

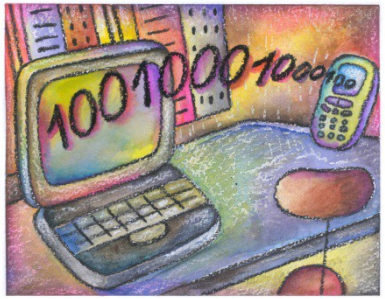
Output:

- Easier to get to detail data (drill down capability)
- Provides more self-service and on-demand use for authorized users

Modules/Status Data Warehouse

Module	Status	Business Manager Key Business Users
Campus Community Student Records	9/9/2013: Pilot Production	**Clare Korinek** Kris Daggett, Nick Jones
Admissions	Delayed: Awaiting Final Data Verification by IR	**Tim Heuer** Ann Bezbatchenko, Rich Heath
Faculty Instructional Activities	9/9/2013: Replacement of the RDS based FIA with DW	**Rick Hurst** Ping Tsui
Student Financials	10/7/2013: Pilot Production	**Larry Fortuna, Tom Catania** John Campbell, Tracy Snowberger
Financial Aid	10/21/2013: Pilot Production	**Nancy Merz** Kevin Ahern

Demo: Financial Aid
“Student Portfolio”



2013 ITESC Schedule

Jan. 24, 2013 – (via email)

- Project Portfolio Prioritization Results

Mar. 7, 2013 - Thursday, 1:30-3:30 PM

- BCDR Update
- DWBI Update/Demo
- Change Management Update

Apr. 25 2013 - Thursday, 1:30-3:30 PM

- Technology Briefing

Jun. 20, 2013 - Thursday, 3:00-4:30 PM

- Project Portfolio Prioritization
- eMail Update
- Sakai Update
- "Panic Button" Analysis

Jul. 25, 2013 - Thursday, 1:30-3:30 PM

- Project Portfolio Prioritization Results
- "Near Complete" Project Updates

Sep. 24, 2013 - Thursday, 1:30-3:30 PM

- Subcommittee Reports
- Major Projects Status Reviews

Oct. 24, 2013 - Thursday, 1:30-3:30 PM

- ATC Update
- BI Dashboard Demo
- BCDR Update

Dec. 12, 2013 - Thursday, 1:30-3:30 PM

- Major Projects Status Reviews
- Project Portfolio Prioritization