MSU INVESTMENT PROPOSAL FOR INSTITUTIONAL PRIORITIES

PROPOSAL OVERVIEW

Title	Electronic Workflow and Document Management	**Request Date**	December 2011
Department	Joint: ITC, A&F	**Email**	lhumberger@montana.edu
Requestor	Laura Humberger	**Phone**	994-4361

STRATEGIC ALIGNMENT

Core Themes and Objectives (check all that apply)

Educate Students

☐ Our graduates will have achieved mastery in their major disciplines

☐ Our graduates will become active citizens and leaders

☐ Our graduates will have a multicultural and global perspective

☐ Our graduates will understand the ways that knowledge & art are created and applied in a variety of disciplines

☐ Our graduates are prepared for careers in their field

☐ We will provide increased access to our educational programs

☐ Communities and external stake holders benefit from broadly defined education partnerships with MSU

Create Knowledge and Art

☐ Students, faculty, and staff will create knowledge and art that is communicated widely

Serve Communities

☐ We help meet a fundamental need of the citizens of Montana by providing degree programs for our students

☐ We help meet the educational needs of the citizens of Montana by providing a wide range of educational opportunities to a variety of students

☐ Our students, faculty, staff, and administrators reach out to engage and serve communities

☐ Our students, faculty, staff, and administrator reach in to build the university community

Integrate Learning, Discovery, and Engagement

☐ Each graduate will have had experiences that integrate learning, discovery and engagement

☐ Outreach activities will educate students and address the needs of the communities we serve

☐ Students, faculty, and staff will create knowledge and art that addresses societal needs

☒ MSU is a community that will be characterized by synergy within and across disciplines, roles and functions.

Stewardship

☒ The public trusts the institution to operate openly and use resources wisely

☒ The faculty and staff are well-qualified and supported

☐ MSU will support Native American students, programs, and communities

☐ MSU will be an inclusive community, supporting and encouraging diversity

☒ Our publicly provided resources are used efficiently and effectively

☒ Natural resources are used efficiently and sustainably

☒ MSU nurtures a culture of resource conservation and ecological literacy among students, faculty and staff

☐ Our physical infrastructure (e.g., building, equipment, open spaces) will be well-maintained and useful

INSITUTIONAL BENEFIT	
Campuses	☒ Bozeman ☒ Billings ☒ Havre ☒ Great Falls ☒ FSTS ☒ Extension ☒ MAES
Cross Depts	Please List: _All departments will benefit, as will students, from more efficient operations
TIMEFRAME	
Proposed Dates	**Start**: July 2012 **End**: Milestones throughout, with two pilot areas completed December 2014

COST AND REQUIREMENTS

Funding Type	One-Time ($)	Multi-Year ($)			Base ($)	FTE
		Year 1	Year 2	Year 3		
Personnel (*w/benefits*)		130,000	215,000	215,000	215,000	3
Materials & Supplies						
Travel		4,000	6,000	6,000	6,000	
Contracted Services	175,000					
Capital	200,000	2,000	2,000	2,000	2,000	
Other Operations						
TOTAL	376,000*"	136,000	223,000	223,000	223,000	3

Please comment, if necessary, regarding cost and requirements.	** Note: One-time funding has already been set aside, and only the recurring base funding is requested. One-Time Funding Summary: *SunGard Professional services – Workflow* $110,000 Project Management, installation, technical training, functional training, system verification, onsite travel, post implementation review. *SunGard Professional Services –Document Management Suite* $65,000 Project management, needs analysis (1st business area), installation,technical training, functional training, system verification, onsite travel,post implementation review *Infrastructure Hardware/Software* $100,000 Servers & disk storage (test and production), operating system licenses, backup media *Workstation Hardware/Software* $100,000 Scanners, a combination of desktop and central, mix to be determined Base Funding Summary: Based on a review of highly successful and less-successful projects, and the requirements that the ITC office is currently facing in terms of implementation and ongoing maintenance of systems, the base funding request includes a junior-level programmer, a server administrator, and a system analyst. The programmer and server administrator would reside in ITC to ensure necessary capacity for current and projected needs including implementation and maintenance of DegreeWorks, BRM, and the Workflow and Document Management project. The server administrator would not be needed until the 2nd year, whereas the system analyst and programmer are needed immediately upon project kickoff. The system analyst would reside in the Admin & Finance area, and add the necessary capacity to build and maintain workflows and an efficient document management system for HR/Payroll, Business Services, Student Accounts, and the Budget office. Travel funds are requested for the employees' attendance at the annual SunGard Summit, as are funds to purchase a computer for each employee on a three-year replacement schedule. Annual Base Cost Detail: Server Administrator: $85,000 Junior Programmer: $65,000 System Analyst: $65,000 Travel to Summit (3) $ 6,000 Computer & related (1) $ 2,000

Implementation and ongoing maintenance and improvement of a 4-campus electronic document management and workflow solution. This proposal requests the addition of 3.0 FTE to perform support and management of the SunGard Higher Education Banner Document Management Suite and Workflow. The University already owns the software license for this product, and has funds set aside for the one-time implementation and installation costs.

Background

MSU Executives have identified several technology solutions to enhance the student experience, assist advising, improve student retention efforts, create administrative efficiencies, and lessen the administrative burden on departmental staff. These technology solutions include: -

  ➢ DegreeWorks
  ➢ Banner Relationship Management
  ➢ Electronic Document Management and Workflow solutions

As identified in a past business process study, MSU consumes a substantial amount of time, space, and paper in accomplishing tasks. There is demand for document management and workflow services as evidenced by the fact that various campuses/departments have already implemented stand-alone document imaging software applications and services, or are planning to do so, thereby losing savings from shared licensing and maintenance of an Enterprise solution. However, these stand-alone systems are in substance only serving as electronic filing cabinets, and do not interface with the Banner system; so, when querying data in Banner, it is not possible to simultaneously retrieve an image of related documents (vendor invoices, student financial aid applications, etc.). Additionally, paper forms, rather than electronic notifications of events and approvals, are still the norm, rather than using an electronic workflow to provide approvals or kick of the next step in a sequential process for students, faculty or staff.

Increased student enrollment has been managed without increasing support staff levels, largely due to the implementation of technological enhancements such as electronic billing, online payment, and custom developed advising tools. These tools have increased the maintenance load on IT resources, and the effort savings achieved by front-line staff have been absorbed by the increased student enrollment. Further, strategic additions and building of the University's infrastructure to support its students need to be made for succession planning in light of support departments which have staff nearing retirement.

Implementation of the DegreeWorks and BRM systems with the current staffing level will significantly impact existing resources. From a technical and central office perspective the implementation effort will divert hours away from the maintenance of current systems and services, and prevent new efficiencies from being implemented. This can be mitigated in the short term by using vendor provided consulting services and employing temporary labor to cover staff re-assignments; however, once implemented, these systems and services decrease the existing capacity to maintain the new systems and services throughout the business life-cycle.

From an IT organization perspective, it is accepted that "Projects and initiatives typically average approximately 25% of the total IT budget (the remainder allocated to assets within operations in such areas as existing applications, infrastructure, people, processes, etc.)." [1], As a result of implementing a new system or service, the capacity for further initiatives is reduced. Depending on the complexity of the new system or service, one new project can completely absorb any capacity for new projects.

In order to meet the needs of the students, faculty and staff and implement the new technology enabled solutions that will allow MSU to continue to service an increased student enrollment, it is necessary to also increase staff capacity to maintain the new systems and services. It should be noted that while this proposal is specifically targeted at building capacity for implementing and supporting the implementation of Electronic Document Management and Workflow

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[1] Maizlish, Bryan & Handler, Robert. 2005. IT Portfolio Management Step-by-Step. Hoboken, NJ: John Wiley & Sons Inc.

solutions it should be assumed that the additional staff capacity will relieve the workload foreseen for both the degree audit/advising and student relationship management implementations.

PROPOSAL SCOPE
Describe the broader impacts and benefits of this proposal

Paper documents and manual processes divert resources from and hinder achievement of more important work of the university. They affect the faculty, staff, and students; are costly; cause longer cycle times for tasks to be completed; and limit the availability of information; while contributing to long service times for students (i.e., while a paper file is located or a scholarship authorization form makes its way across campus). This reduces stakeholder satisfaction and impedes integration, process improvement and other efficiency related initiatives and efforts, as well as contributing to excessive use of paper and physical document storage requirements.

All parts of the university work with paper documents and manual processes on a routine basis. Some departments duplicate effort by collecting the same information, or by recording it in paper and then electronic form, because sharing information between departments is difficult. Paper documents are inherently costly to manage. Physical space is limited and expensive to rent or build and better utilized for offices or other workspace than for paper storage. Supplies and materials costs for paper documents include items such as paper, toner, envelopes and postage, as well as file folders, labels and cabinets. Employee time and effort costs spread through nearly all aspects of paper document management and manual processes. Examples of such costs are correcting errors not detected when preparing paper documents or manual spreadsheets, locating mishandled paper documents, and identifying, pulling and moving paper documents to relocate, archive or destroy.

Paper documents and manual processes inherently take longer to complete and limit the availability of information. Reviews and approvals of proposed actions take longer mainly because of delivery of paper between approvers. Responses to information requests from students, regents, legislators, accrediting bodies, auditors and others are less than quick, and sometimes incomplete. Shared access to information for teaching, research, outreach and administrative collaboration is limited, hindering integration and growth. Performance monitoring and improvement are challenging because tracking of paper and manual processes is difficult and policies and procedures are inconsistent between departments. Business continuity and information security control and monitoring options are limited.

As an example, studies have suggested that in the average Accounts Payable organization (involved in the acquisition and payment of goods and services): -

> ➢ The average document is copied, either physically or electronically, nine to 11 times at a cost of about $18[2],
> ➢ Documents cost about $20 to file[3],
> ➢ Retrieving a misfiled document costs about $120[4],
> ➢ Some organizations believe that they spend up to 15[5]% of revenue on document management
> ➢ Documents claim up to 60% of office workers time and account for up to 45% of labor costs[6] (2001 data)

Other paper based costs include storage, document transportation, supplier dispute resolution, internal and external audits, duplicate payments, late payment penalties and errors.

University Business Services and Human Resources in Bozeman have identified areas for which using these services will provide process efficiencies and are willing to spearhead the effort, with expansion to Financial Aid, Admissions, The Graduate School, Auxiliary Services, Safety & Risk Management, and all of campus in the long run.

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[2] Gartner
[3] Gartner
[4] Gartner
[5] IKON
[6] IKON

ADDITIONAL INFORMATION

Implementation Plan *(Please describe with timelines)*

SGHE's suggestion is to start with Workflow implementation and build Workflows with a placeholder for electronic records, and then implement document management suite while folding it into the Workflow processes. The assumption is that a single business area and process is selected for Workflow and document management pilot.

Document Management Suite:
SGHE project plan total duration – 670 hours over 247 days (MSU staff 469 hours/consulting services 201 hours during this time) covering: Project management, planning & needs analysis, test Installation, training (1st business area), testing, practice & process re-engineering, production configuration, go-live.

Workflow:
SGHE project plan total duration – 497 hours over 155 days (MSU staff 497 hours/consulting services 464 hours) covering: Project management, Workflow server & technical training, installation and configuration, process model training, Workflow specific tools (SQL, Third party applications, process analysis), pre-production configuration, go-live.

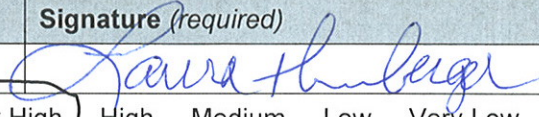SEE ATTACHED IMPLEMENTATION PLAN GANTT CHARTS

Assessment Plan *(Please describe with indicators)*

- First, the processes to be "electronified" will be identified through information gathering that is already occurring in the departments—i.e., what processes cause the most pain and what would give the most bang for the buck.
- Cost/productivity measures of that process will be developed (for example, time lag between the time a student is notified of a scholarship award and the time at which it is applied to his/her student account; or time lag between a vendor's invoice date and the date at which payment is issued)
- Implementation of the process will occur in the pilot area according to SGHE plan
- Cost/productivity measures will be measured during implementation to identify areas for improvement/training
- Training and development of staff will target the problem areas
- Cost/productivity measures will be re-measured after the process is fully implemented to assess success or failure of the pilot area
- Corrections will be made to the implementation plan prior to implementing workflow/document management in the next area identified for improvement

If assessed objectives are not met in the timeframe outlined, what is the plan to sunset this proposal?

If expected outcomes are not achieved, existing paper processes and paper filing methods may be retained; however, because information gathering will occur at the departmental level, and the department personnel using the processes will be driving the improvements, there is a low likelihood of failure.

In conversations with the Chief Information Officer, the biggest risk of failure is likely to occur if we do not support the project with a System Analyst to maintain the workflows and document management process on an ongoing basis.

SIGNATURES

Department Head *(please print)*	Signature *(required)*	Date

Dept Head Priority *(please circle one):*   Very High   High   Medium   Low   Very Low

Dean/Director *(please print)*	Signature *(required)*	Date
Laura Humberger	*Laura Humberger*	1-11-12

Dean/Director Priority *(please circle one):*   (Very High)   High   Medium   Low   Very Low

Executive/VP *(please print)*	Signatures *(required)*	Date
Terry Leist/Jim Rimpau Joint Proposal		

Executive/VP Priority *(please circle one):*   Very High   High   Medium   Low   Very Low

ID		Task Name	Work	Duration
1		**Workflow Services - Standard Implementation (non MIF)**	**384h**	**154.5d**
2		**Workflow Planning**	**12h**	**1d**
3		Workflow Functional Planning (remote)	8h	8h
4		Workflow Technical Planning (remote)	4h	8h
5		**OAS and Workflow Installation**	**32h**	**40.5d**
6		Pre-installation and OAS Installation for Workflow (remote)	12h	32h
7		Workflow Product Installation Service prep and follow-up	4h	19d
8		Workflow Product Installation Service (remote)	16h	44h
9		**Workflow Implementation**	**340h**	**154.5d**
10		**Workflow Training**	**340h**	**154.5d**
11		**Workflow Server Administration and Technical Training**	**28h**	**20.5d**
12		Workflow Admin and Tech Training prep and follow-up	4h	20.5d
13		Workflow Administrative Training (remote)	8h	44h
14		Workflow Technical Training (remote)	16h	44h
15		**Workflow Process Modeling Training**	**40h**	**37d**
16		Workflow Process Modeling Training prep and follow-up	4h	21.5d
17		Workflow Process Modeling Training (on site)	36h	5.5d
18		**SQL for Workflow**	**40h**	**10d**
19		SQL for Workflow prep and follow-up	4h	5d
20		SQL for Workflow (onsite)	36h	5d
21		**Workflow and Third Party Applications**	**12h**	**35d**
22		Workflow and Third Party Applications prep and follow-up	4h	20d
23		Workflow and Third Party Applications (remote)	8h	5d
24		**Workflow WPA Training**	**80h**	**20d**
25		Workflow Process Analysis (WPA) - Workflow Consulant prep and follow-up	4h	20d
26		Workflow Process Analysis (WPA) - Workflow Consulant	36h	5d
27		Workflow Process Analysis (WPA) - BPA Consulant prep and follow-up	4h	20d
28		Workflow Process Analysis (WPA) - BPA Consulant	36h	5d
29		**Workflow Consulting**	**80h**	**40d**
30		Workflow Consulting Pre-Production Readiness prep and follow-up	4h	20d
31		Workflow Consulting Pre-Production Readiness (on site)	36h	5d
32		Workflow Consulting Post-Production Readiness prep and follow-up	4h	20d
33		Workflow Consulting Post-Production Readiness (on site)	36h	5d
34		**Technical Support**	**20h**	**136d**
35		Workflow Technical Support (remote)	20h	136d
36		**Project Management**	**40h**	**136d**
37		Project Management	40h	136d
38		**Optional Workflow Services/Tasks**	**16h**	**38d**
39		Workflow Verification for client self installs	8h	44h
40		Workflow Custom Work - per client basis	0h	0d
41		Workflow Tech/Admn Train Travel (if done onsite)	8h	5.5d
42		**General Tasks for All Service Objects**	**0h**	**0d**
43		Non-billable	0h	0d

ID		Task Name	Work	Duration	M-1	M1	M2	M3	M4	M5	M6	M7	M8	M9
44	▦	Non-billable	0h	0d	◆ 1/3									
45	▦	Non-billable	0h	0d	◆ 1/3									
46														
47		**Client Side Activities**	**497h**	**90d**										
48		**Workflow Planning Session**	**24h**	**5d**										
49		Workflow Planning Session	4h	5d										
50		Workflow Planning Session	4h	5d										
51		Workflow Planning Session	4h	5d										
52		Workflow Planning Session	4h	5d										
53		Workflow Planning Session	4h	5d										
54		Workflow Planning Session	4h	5d										
55		**Workflow Technical Planning - Hardware Planning and Assessment**	**8h**	**5d**										
56		Workflow Technical Planning - Hardware Planning and Assessment	2h	5d										
57		Workflow Technical Planning - Hardware Planning and Assessment	2h	5d										
58		Workflow Technical Planning - Hardware Planning and Assessment	2h	5d										
59		Workflow Technical Planning - Hardware Planning and Assessment	2h	5d										
60		Order Hardware	4h	45d										
61		**Workflow Pre-Install Verification & Oracle Installation**	**2h**	**5d**										
62		Workflow Pre-Install Verification & Oracle Installation	1h	5d										
63		Workflow Pre-Install Verification & Oracle Installation	1h	5d										
64		**Workflow Installation**	**3h**	**5d**										
65		Workflow Installation	1h	5d										
66		Workflow Installation	1h	5d										
67		Workflow Installation	1h	5d										
68		**Workflow Server/Application Administration Training**	**96h**	**5d**										
69		Workflow Server/Application Administration Training	24h	5d										
70		Workflow Server/Application Administration Training	24h	5d										
71		Workflow Server/Application Administration Training	24h	5d										
72		Workflow Server/Application Administration Training	24h	5d										
73		**Workflow Process Modeling Training**	**72h**	**5d**										
74		Workflow Process Modeling Training	24h	5d										
75		Workflow Process Modeling Training	24h	5d										
76		Workflow Process Modeling Training	24h	5d										
77		**SQL for Workflow Training**	**48h**	**5d**										
78		SQL for Workflow Training	24h	5d										
79	▮	SQL for Workflow Training	24h	5d										
80	▮	Workflow Web Services Training	24h	5d										
81		**Workflow Process Analysis (WPA) – Specific Module/Area**	**72h**	**5d**										
82		Workflow Process Analysis (WPA) – Specific Module/Area	24h	5d										
83		Workflow Process Analysis (WPA) – Specific Module/Area	24h	5d										
84		Workflow Process Analysis (WPA) – Specific Module/Area	24h	5d										
85		**Workflow Production Readiness – Specific Module/Area**	**72h**	**5d**										
86		Workflow Production Readiness – Specific Module/Area	24h	5d										

ID	ℹ	Task Name	Work	Duration	1		Quarter 1			Quarter 2			Quarter 3		
					M-1	M1	M2	M3	M4	M5	M6	M7	M8	M9
87		Workflow Production Readiness – Specific Module/Area	24h	5d										
88		Workflow Production Readiness – Specific Module/Area	24h	5d										
89		**Workflow Post Production Visit**	**72h**	**5d**										
90		Workflow Post Production Visit	24h	5d										
91		Workflow Post Production Visit	24h	5d										
92		Workflow Post Production Visit	24h	5d										

ID		Task Name	Duration	Work	Timeline / % Complete
0		**Sample BDMS Implementation Plan**	**247d**	**670h**	0%
1		**BDMS Implementation**	**247d**	**201h**	0%
2		**Planning Phase**	**0.6d**	**1h**	0%
3		Technical Conference Call/Project Kick-Off	0.6d	1h	
4		**Needs Analysis Phase**	**10d**	**80h**	0%
5		On-site Needs Analysis	5d	40h	
6		Write Needs Analysis Report	5d	40h	
7		Needs Analysis Report Completed	0d	0h	◆ 12/18
8		**Install Phase**	**5d**	**40h**	0%
9		Install BDMS in TEST	5d	40h	
10		TEST Installation Completed	0d	0h	◆ 2/19
11		**Training**	**5d**	**40h**	0%
12		On-site Training for 1st business area	5d	40h	
13		Training Completed for 1st business area	0d	0h	◆ 3/5
14		**Six Month Post Implementation Review**	**5d**	**40h**	0%
15		Conduct Post implementation review consultation	5d	40h	
16		**Client Tasks**	**246d**	**469h**	0%
17		**Planning Phase**	**0.6d**	**1h**	0%
18		Technical Conference Call/Project Kick-Off	0.6d	1h	
19		**Needs Analysis Phase**	**3d**	**24h**	0%
20		Needs Analysis meeting participation	3d	24h	
21		**TEST Installation Phase**	**25d**	**16h**	0%
22		Acquire and prepare hardware for TEST installation	20d	8h	
23		Configure firewall and ports for BDMS TEST servers	5d	8h	
24		**Training Phase**	**5d**	**32h**	0%
25		Prepare training room instructor PC and student PCs	0.5d	4h	
26		Verify that scanner(s) used in training is compliant with BDMS.	0.5d	4h	
27		Attend BDMS training	3d	24h	
28		**Testing, Practice, and Re-engineering**	**30d**	**300h**	0%
29		User testing, additional training, practice, and business process re-engineering	30d	300h	
30		**PROD Configuration of BDMS**	**11d**	**72h**	0%
31		Acquire SSL Certificate(s) for BDMS web server(s)	0.5d	4h	
32		Production hardware acquired and installed	1d	8h	
33		Configure firewall and ports for BDMS TEST servers	0.5d	4h	
34		Install BDMS in PROD	5d	40h	
35		Import/create BDMS user accounts for PROD	0.5d	4h	
36		Setup/review document types for PROD	0.5d	4h	
37		Security groups developed and assigned	0.5d	4h	
38		Validate end user's PC, scanner, and BDMS access.	0.5d	4h	
39		Go-live	0d	0h	◆ 4/12
40		**Post Go-Live items**	**134d**	**24h**	0%
41		Take backup of PROD	1d	0h	
42		Backup for systems (database and SAN)	1d	0h	
43		Backup of all production PC servers.	1d	0h	
44		Post impelementation review participation	3d	24h	