Breaking Through the Barriers to Enterprise Standardization, Without All the Pain
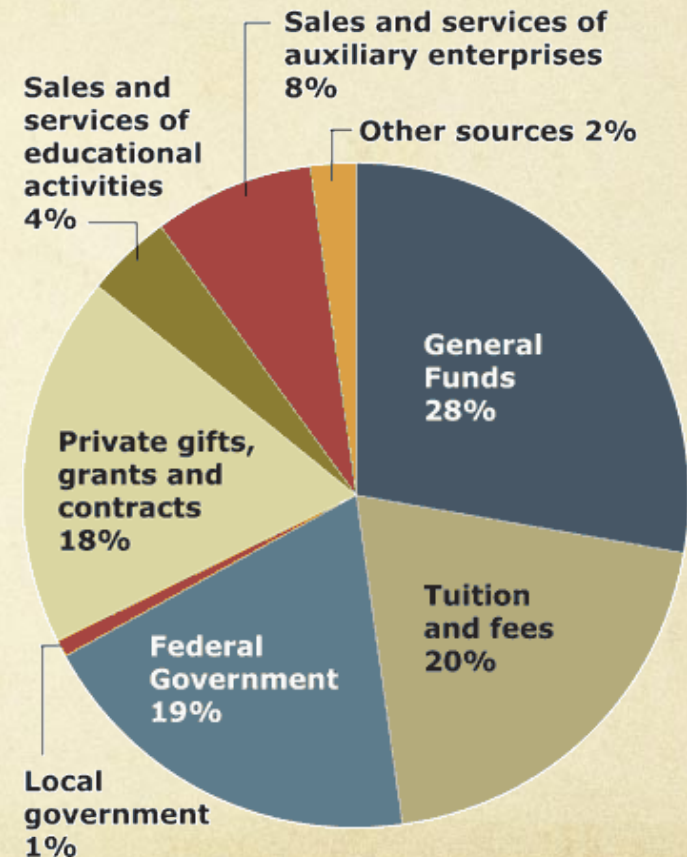
Bill Allison
Director, Campus Technology Services / IST
Chair, IT Architecture Committee
UC Berkeley

Context: UC Berkeley

Year Chartered:	1868
Carnegie Classification:	RU/VH (R1)
Fulltime Faculty:	1,582
Part-time Faculty:	500
Undergraduate Students:	25,500
Graduate Students:	10,298
Staff:	10,000
Academic Departments:	130
Annual Revenue:	$1.78B
State (gen funds):	$498M
Research:	$650M
Tuition:	$330M
Central IT Budget:	$ 60M
Total campus IT spending:	$160M
Total campus IT Staff (FTE):	~800

2008-09 Sources of Funds

- General Funds 28%
- Tuition and fees 20%
- Federal Government 19%
- Local government 1%
- Private gifts, grants and contracts 18%
- Sales and services of educational activities 4%
- Sales and services of auxiliary enterprises 8%
- Other sources 2%

Reference: http://berkeley.edu/about/fact.shtml

UC Berkeley's "Enterprise"

UC Berkeley

And one campus in the larger "UC Enterprise":

Sample Administrative Departments:

Finance
HR Center
Student Affairs
IST (IT)

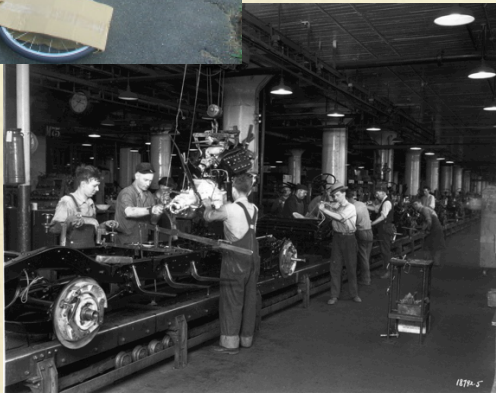**Sample (of the 130) Academic Departments:**

Letters & Sciences
Business School
Law School
Public Health
Optometry
Public Policy
EECS
Forestry

Questions for You

Enterprise Standardization

- Enterprise = whole organization

- Standardization = agreement on common approach

- Optimizing the greater good

- Local sub-optimization implied

GOAL: Different divisions with common processes and Shared Service Centers

Enterprise Systems History

- Patterns recur, but in different form
- Pattern of Evolution/Maturity
- At first People *were* the Process
- Scope of Process expands
- Economic, consumer drivers

Approach for Today

1) Enterprise Systems at Berkeley

2) Growth of Complexity and Cost

3) The Dream of Standardization

4) Barriers to Standardization

5) Case Studies – overcoming the barriers

The UC Payroll/Personnel System

(1970's)

- 1976: UC needs a payroll system

- The Integral contract and design

- Attempts to standardize pay rules

- Maintenance

- Mainframe systems through PC era, selling point is customization: "no change required"

Meanwhile, in the business world...
(Late 1980's-1990's)

- Ratio of managers to workers increased from 19% in 1950 to 32% in 1987

- Since 1988 1/3 - 1/2 of all med/large U.S. businesses downsized every year

- "Compact" Broken in 1990's

Business Process Standardization:
(1990's)

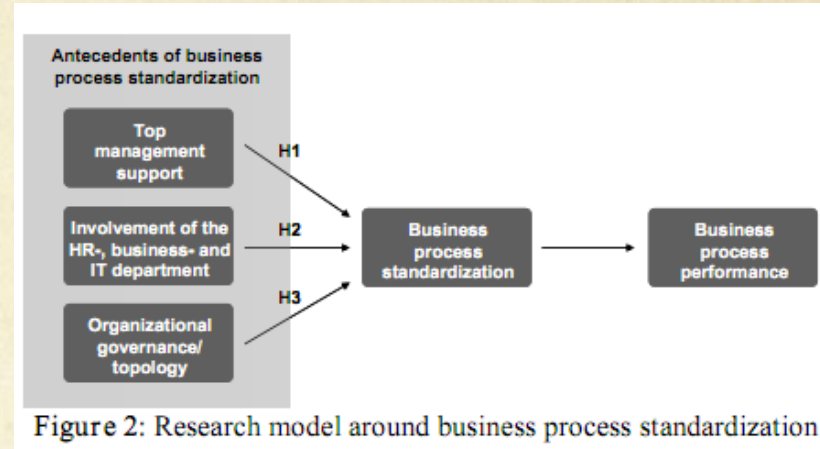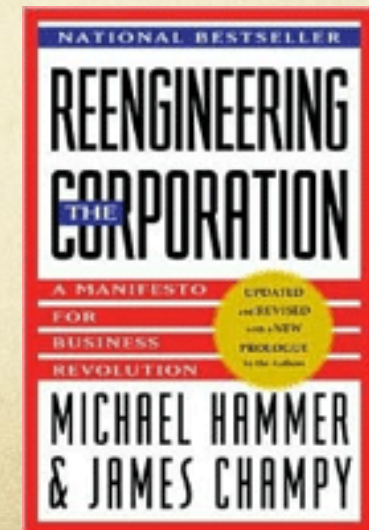1920's – Frank Gilbreth and his "therblig" units

Figure 2: Research model around business process standardization

- July 1990 HBR: Michael Hammer "Don't automate, obliterate"

- Rethink business when bringing technology in

- Influence on ERP

ERP Comes to UC Berkeley
(1994-2005)

- ERP Immaturity

- Encoding existing practices

- Customization & deferred maintenance

- Local control versus standardization

- HR and Financial Systems

- Reporting

- Automation without coordination

Berkeley Financial System Update, December 1997

Business Analysis Progress and Next Steps

The project team made significant progress in the Business Analysis stage of the project as reflected in the following chart. More than 50% of the total business requirements have been written and approved. The business requirements clarify the functions that department and central persons will be performing with BFS.

Business Analysis
Status as of December 18, 1997

	Define Requirements 1	Fit Analysis
Chart of Accounts	61.0%	
General Ledger	34.0%	.5%
Budget	2.2%	
Contracts & Grants	79.1%	19.0%
Purchasing	85.9%	42.2%
Payables	97.0%	8.6%
Loans & Receivables	100.0%	19.6%
Reporting	18.1%	
Approvals	3.6	
Security	55.3%	

1 Percent complete represents business requirement definitions approved by Functional Owner.

The definition of the Chart of Accounts is targeted for completion by January 10. The remainder of the Business Requirements definitions are targeted for completion by January 31.

Functional Owners & the Departmental User

- Fit/Gap
- Two Constituencies
- The Role of IT

Customization & Satisfaction

(2003)

CHALLENGES:

- User satisfaction correlates with customization

- Cost also correlates with degree of customization

- Complexity / Maintainability

iNews: Administrative services

ERecruit's trial by fire

Patrick Ellis, Human Resources
Bill Allison, IST–ASD

On July 14, 2003, eRecruit, the HRMS component that manages the staff recruitment process, launched to both praise and some questions about the user experience as delivered by PeopleSoft added to the roar. Additionally, as often happens with rollout of la first few weeks, exacerbating the pain for campus users as they tried to adapt to new processes. Campus feedback was loud — s the things we could do to improve the user experience with HRMS.

After the launch, eRecruit began quietly meeting two of its prime objectives: automating the processing of job requisitions and ap weeks of launch, eRecruit was supporting these tasks at an equal, and then higher, volume than the previous manual process. As submitting a total of 46,640 applications, and the campus is processing applications at a rate roughly 50 percent higher than last

Immediately after launch, the development team began attacking the two biggest problems — performance and browser compatibility issues. Working in close cooperation, the HRMS team and IST determined that the biggest performance issue was actually tied to year-end financial transactions in a shared database environment, and addressed these performance problems within the first two weeks of launch. Meanwhile, as the flames flickered on Micronet, we struggled to address browser compatibility. As purchased, eRecruit is certifie Explorer and Netscape. The HRM many of these incompatibilities a modifications (see Figure 1) to d population. In addition, to broade

Browsers For HRMS

Figure 4-3. Limiting Customization Was a Strategic Goal

Percentage of Respondents

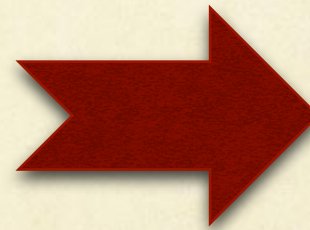| Strongly Agree | Agree | Disagree | Strongly Disagree |
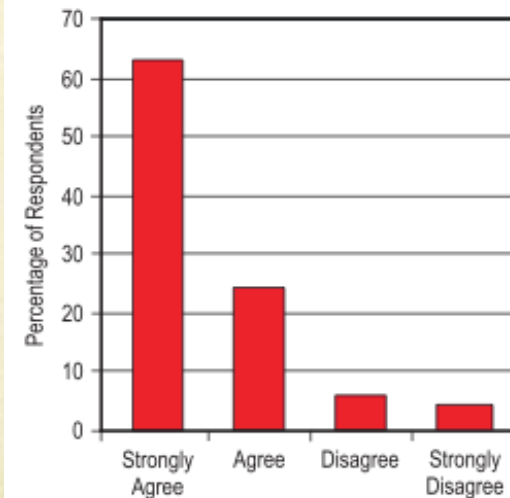
ECAR

The Dream
(2008)

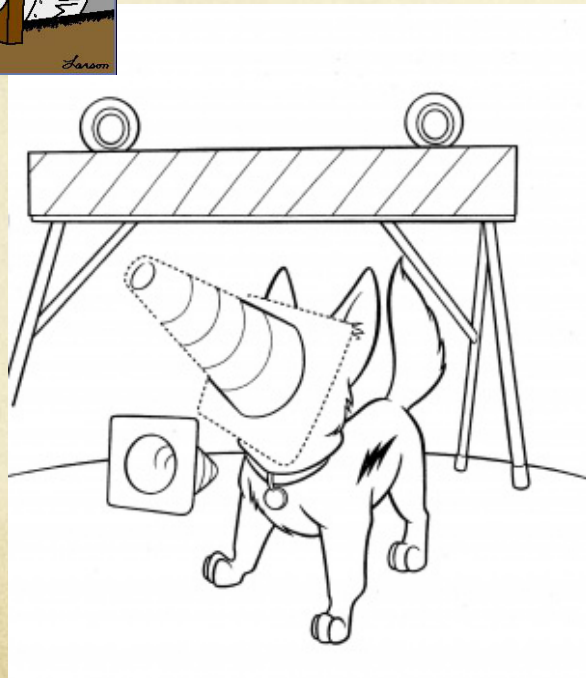"Charlie, we rolled out Peoplesoft HR in 6 months and full SAP in 3 months at Home Depot"
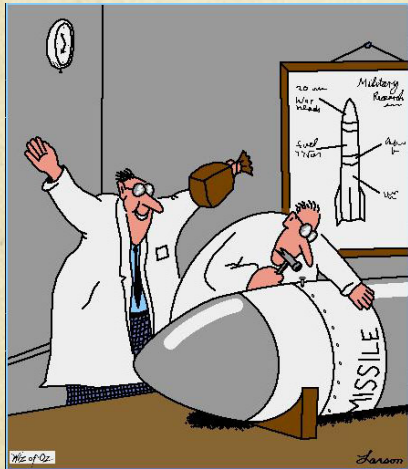
Standardization: the push for vanilla
(2008)

Barriers to Standardization

- Truly Unique Processes

- Cultural Resistance (Administration, IT & Departments)

- Lack of exception process

We *Look* Great! But...

(2008-2010)

- Everyone gets 1,500 to 40 (vanilla)

- Functional owners didn't get departmental needs

- Process automation didn't get reengineering

- Business rules didn't get understood

- Everybody got pain: administration & departments

- Pain got exacerbated by aggressive schedule

Lessons of Vanilla

(2010)

Lessons of Vanilla

(2010)

- Move to "vanilla" brought stealth reengineering in the form of delivered processes

- Need for broad, multi-channel outreach & engagement

- Broader representation needed (both constituencies)

- Temptation of leadership to over-sell benefits

- Change management and communications

- "We need less consensus and more participation"

- Delays from fear of being wrong – paralysis and then snap decisions

Change Is Coming

① The accelerating pace of change …

Agricultural Revolution ←8,000 years→ Industrial Revolution ←120 years→ Light-bulb ←90 years→ Moon landing ←22 years→ World Wide Web ←9 years→ Human genome sequenced

② … and exponential growth in computing power …

Computer technology, shown here climbing dramatically by powers of 10, is now progressing more each hour than it did in its entire first 90 years

COMPUTER RANKINGS
By calculations per second per $1,000

Analytical engine
Never fully built, Charles Babbage's invention was designed to solve computational and logical problems

Colossus
The electronic computer, with 1,500 vacuum tubes, helped the British crack German codes during WW II

UNIVAC I
The first commercially marketed computer, used to tabulate the U.S. Census, occupied 943 cu. ft.

Apple II
At a price of $1,298, the compact machine was one of the first massively popular personal computers
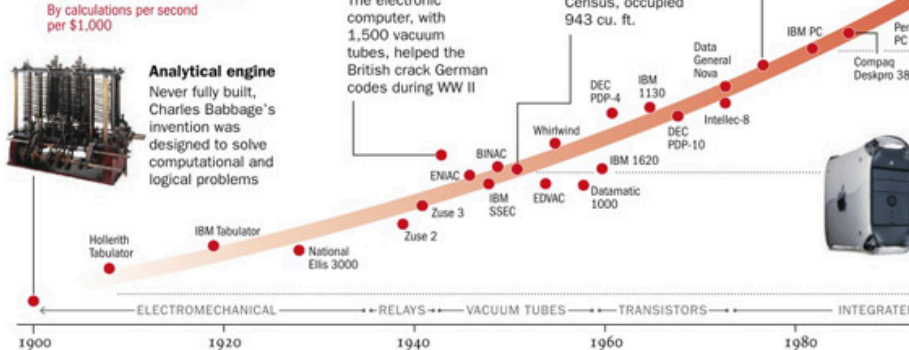
③ … will lead to the Singularity

2045
Surpasses brainpower equivalent to that of all human brains combined

Surpasses brainpower of human in 2023

Surpasses brainpower of mouse in 2015

Labels: Hollerith Tabulator, IBM Tabulator, National Ellis 3000, Zuse 2, Zuse 3, ENIAC, IBM SSEC, BINAC, EDVAC, Datamatic 1000, IBM 1620, Whirlwind, DEC PDP-4, IBM 1130, DEC PDP-10, Intellec-8, Data General Nova, IBM PC, Compaq Deskpro 386, Pentium PC, Pentium, Dell Dimension 8400, Mac Pro, Nvidia Tesla GPU & PC

ELECTROMECHANICAL — RELAYS — VACUUM TUBES — TRANSISTORS — INTEGRATED

1900   1920   1940   1960   1980

Change Is Coming to Cal

○ Leadership must make more nimble, effective decisions

○ Campus must define governance: input vs. decision rights; who makes decisions and how

○ The institution must simplify its processes

○ The institution must reengineer the way it selects, configures and deploys technology

○ The campuses must standardize where we can across the UC system

○ This requires re-thinking the organization's staffing models

The IT Organization Today

784 Berkeley staff classified in IT jobs today

- ($81M annually)

  - 42 work in *demand* to identify and document all aspects of the problem to be solved

  - 46 work in *design* and business analysis of projects

  - 696 work in *delivery* of services (the fire-fighters)

- Demand
- Design
- Deliver
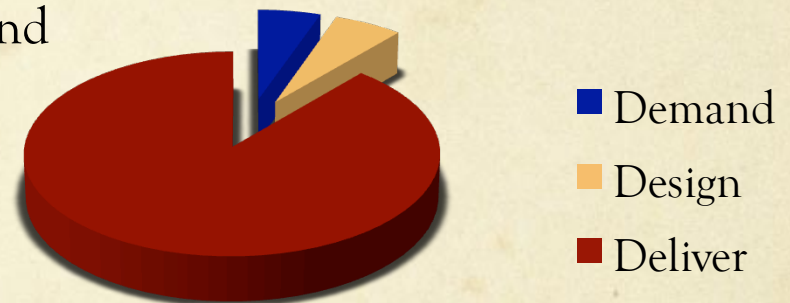
Need to balance:
Demand, Design, Delivery

Demand Planning: 25%
Identify and document all aspects of the problem to be solved
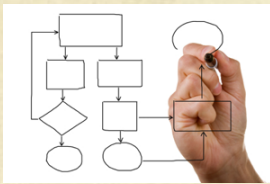
Detailed Design: 30%
Analyze process, data and technology options and map the solution at the right layer

Delivery: 45%
Borrow, buy, or build the right solution to achieve the design

■ Demand
■ Design
■ Deliver
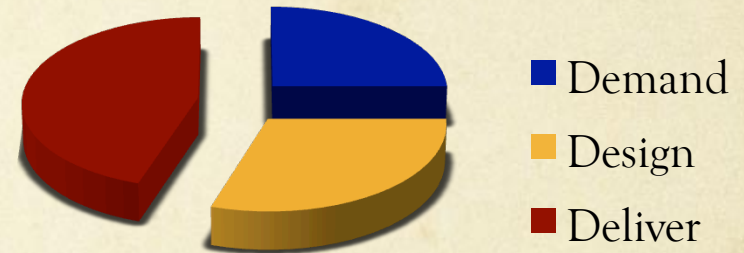
Managing Demand

- 24 Timekeeping systems at UC Berkeley

- 2 that integrate with PPS electronically

- Standardizing on solution

- Standard rules : Nonstandard interpretation

- The importance of stupid questions

- Incentives matter

Aligning Design with Vision

Strategy: *"Become more student-centric"*

Team's Interpretation:

Student-service focus:
Comfortable Wait

Initiative team designed new comfortable waiting area with couches, TV etc.

Registrar's Vision:

Student-service focus:
No Wait

What he meant: Design the registration process to run "like a hotel check-in"

Sustaining Standards through Change Management

Process for Technical Bugs and Mods– BFS
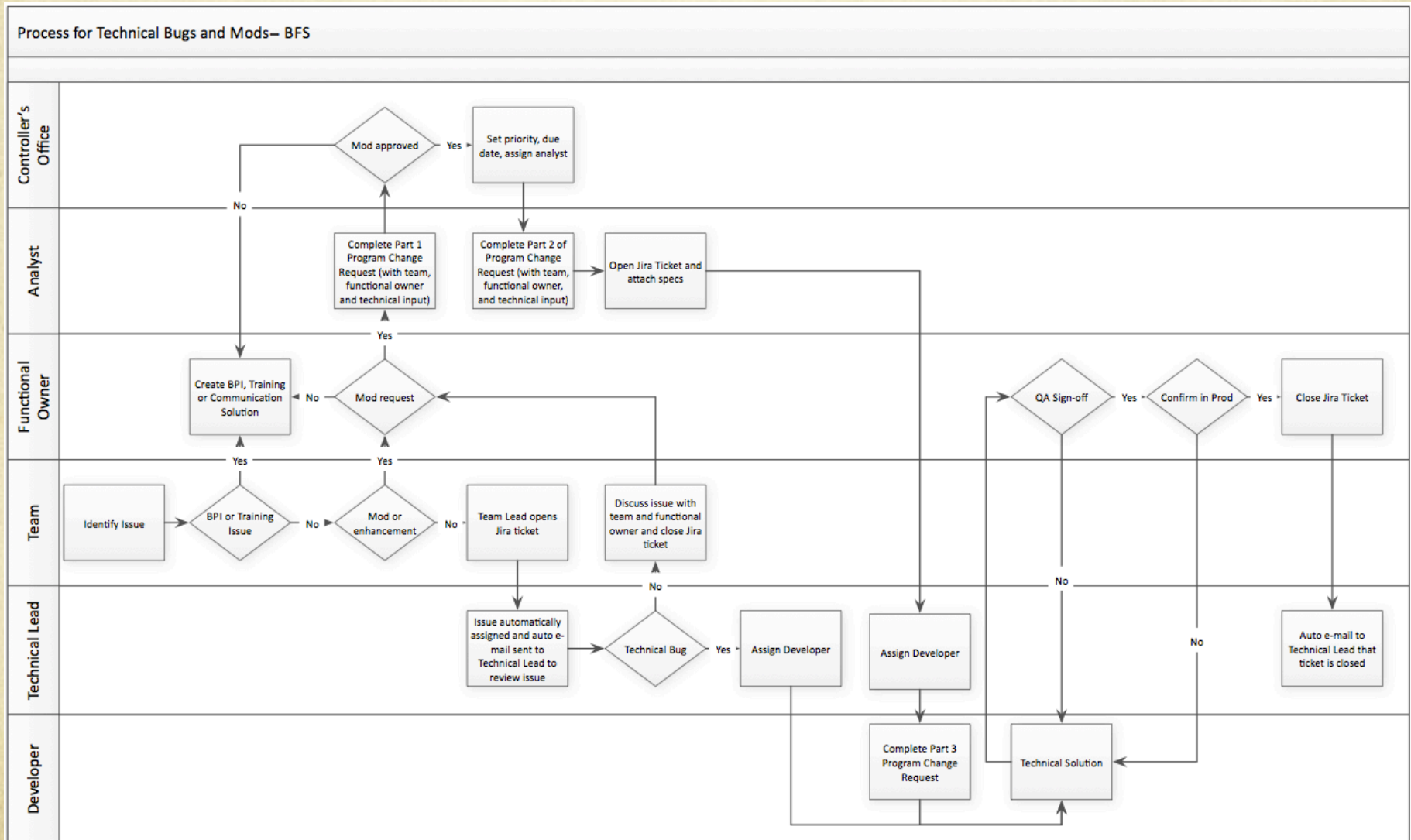
Multi-campus eProcurement

Using Lessons from Vanilla

- New model in play: Saas

- A New Role for IT

- Business in the Driver's Seat

- Managing Risk and Expectations

Staffing A Project for Standardization

Clearly Defining Roles

Business Needs Identification Group
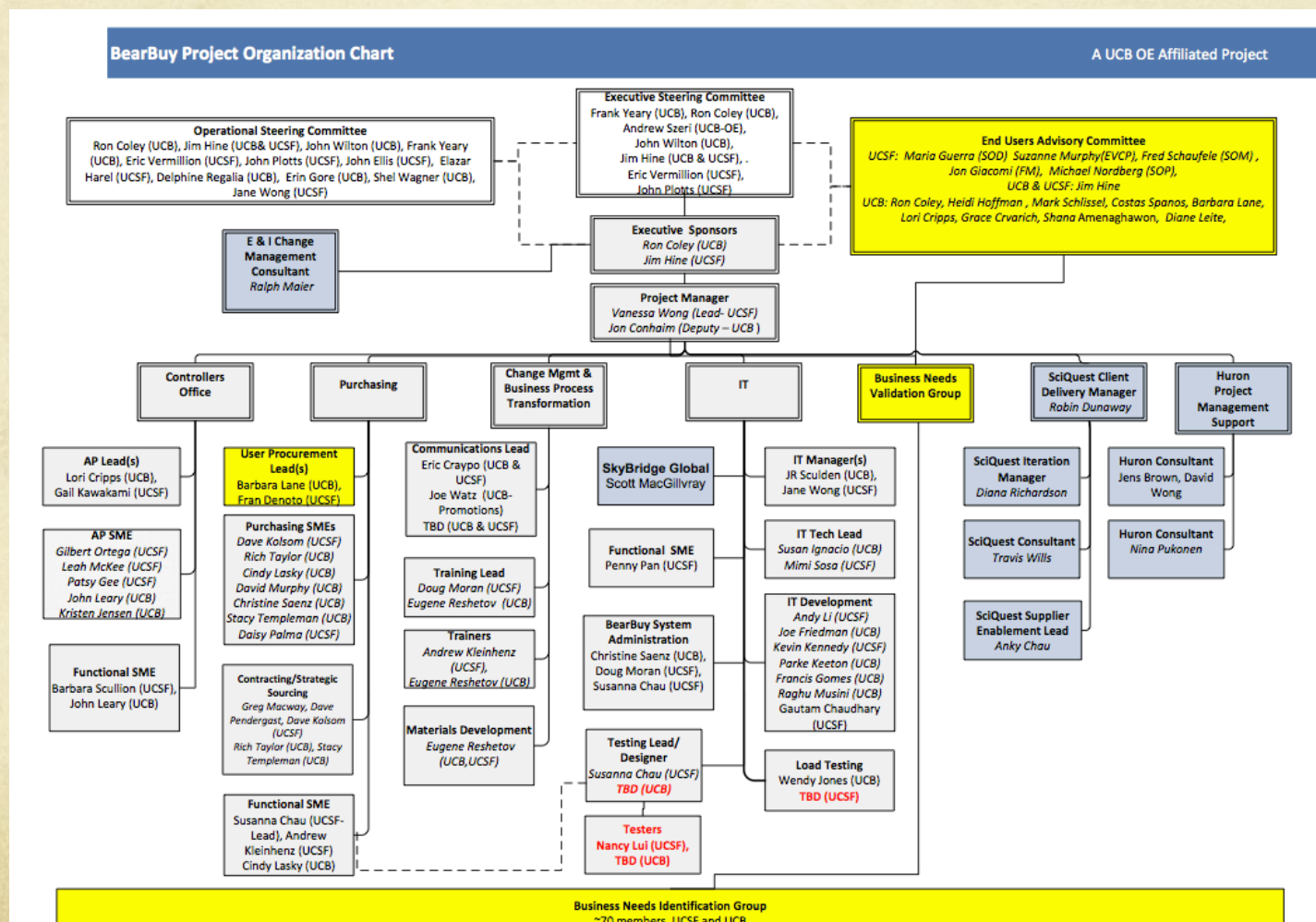
UCB			UCSF			
Last Name	First Name	Department Name	Last Name	First Name	Role	Department Name
Amenaghawon,	Shana	College of Chemistry	Aralar	Reynaldo	Approver, Buyer	FM: CPFM FACILITIES
			Barbara	Requester, Buyer	FM: RISK MGMT AND
			Kathy	Approver	SOM: CANCER CENTER
			Antonio	Approver	SOM: FCM-FAMILY HL
			Matthew	Requester, Appro	SOP: PHARMACEUTIC
			Fran	Requester	SOM:S/M-DIABETES C
			Melanie	Requester	FM: CONTROLLER'S O
			Marina	Dept. Mgr	SOD: OROFACIAL SCIE
			Paul	Buyer	SOD: DENT-ORAL & M
			Mary	Approver, Buyer	SOM: CELL CULTURE
			Sheri	Requester	SOM: RADIOLOGY
			Herman	Requester, Appro	FM: CPFM-FACILITIES
			Joyce	Finance Mgr	SOM: FINANCE OP MA
			William	Approver	SOP: BIOENGINEERIN
			Tiffany	Requester	SON: SCHOOL OF NUF
			Michael	Assoc Dean	SOP: DEAN'S OFC: SC
			Daisy	Approver	FAS: CPC
			Constance	Approver	SFGH PSYCH CHILD
			Audrey	Consultant	FM
			Lita	Approver, Buyer	SOP: DEPARTMT OF C
			Victor	Requester	SOP: DEPARTMT OF C

Project Team Roles and Responsibilities

Role	Resource	Responsibility
		Faclate internal meetings to drive resolutions and decisions by providing guidance and knowledge and best practices in universities setting similar to UC campuses. Provide assistance in configuration decisions, data decisions, and integration approaches to ensure successful implemention of the solution
E & I Procurement Consultant	Ralph Maier	Provide consulting on tactical and strategic procurement practices using SciQuest with PeopleSoft system
Skybridge Global Consultant	Scott MacGillvray	Provide consulting and technical guidance on data integration points between PeopleSoft and SciQuest including best methodology and approach in necessary PeopleSoft enhancements
User Procurement Leads	Fran Denoto-Reynolds (UCSF) Barbara Lane (UCB)	The User Procurement Leads provide their specialized knowledge on University purchasing processes and offer points of view from the core procurement operation. Members will attend design workshops and provide input to the solution configuration and business processes. The User Procurement Leads have the authority to make critical purchasing business and policy decisions for their campus. Executive Sponsors have the option to revise these decisions or have these decisions approved by the Executive Steering Committee, Operational Steering Committee, and End User Advisory Committee as they deem appropriate
Purchasing SMEs	Dave Kolsom (UCSF) Rich Taylor (UCB) David Murphy (UCB) Daisy Palma (UCSF) Christine Saenz (UCB) Cindy Lasky (UCB) Stacey Templeman (UCB)	The Purchasing SMEs will provide their specialized knowledge on UC Berkeley and UCSF purchasing processes and offer points of view from the core procurement operation. Members will attend design workshops and provide input to the solution configuration and business processes.
Contracting/Strategic Sourcing	Dave Kolsom (UCSF) Rich Taylor (UCB) Dave Pendergast (UCSF) Greg Macway (UCSF) Stacey Templeman	The Contract Manager provides their specialized knowledge on the University procurement contract management processes and requirements. Has the responsibility and authority for overall supplier relationships, contract negotiation, driving supplier requirements, and conducting supplier performance management. The Strategic Sourcing team collaborates with SciQuest Supplier Enablement resources and suppliers in facilitating and managing supplier enablement, catalog configuration and supplier outreach as it relates to SciQuest content.
AP Leads	Gail Kawakami (UCSF) Lori Cripps (UCB)	The AP Leads provide their specialized knowledge on University finance and accounts payable processes and offer points of view from the core finance operation. Members will attend design workshops and provide input to the solution configuration and business processes. The AP Lead has the responsibility and authority to make critical AP business and policy decisions for each of their campuses
AP SMEs	Patsy Gee (UCSF)	The AP SMEs provide their specialized knowledge on University finance and accounts payable

Managing Risk

UCB - UCSF BearBuy Implementation Risk Analysis

A risk analysis for the BearBuy implementation is performed soon after it is determined that the project hints a sign of slippage in early February 2011. The initial risk analysis will likely focus more on project-level such as no functional design work, inadequate resources, and competing project priorities. The risk analysis will be updated monthly to ensure that the risk activities (mitigations, monitoring, contingency) are still adequate and that the risk priorities are still true. New risks may be identified, older risks might be minimized, and mitigations may need to be updated. Ideally, a continuous risk management approach should be ensure that the most relevant risks to this project will be monitored, tracked, and mitigated.

Risk Assessment Consideration

Does the project have executive sponsorship and championship?
What is the level of responsiveness of the supplier and access to information of the SciQuest functionality?
Has the project taken into consideration team knowledge gap in customizing PeopleSoft to integrate to SciQuest when developing the project plan schedule?
How likely is it that the design and verification effort has been underestimated? Has the effort been significantly underestimated?
Are the functional requirements defined, complete, unambiguous and understood by the team? If not, what percentage of requirements is still uncertain?
Does the project consultants have the right level of expertise and experience implementing project in universities of this size and complexity?
Is there a risk of stakeholders' lack of confidence that BearBuy will deliver to help end users do their job? Do the requirements adequately meet users' business needs?

Methodology

Each risk is assigned a value for the probability (how likely) and the impact (consequences). In this risk assessment, the probability is given the value of 1 (low), 2 (medium), or 3 (high). The impact is also rated on same scale. The rating is derived by multiplying the value in probability and impact to give a value of 1 through 9, where 1 is a low probability/low impact risk and 9 is a high probability/high impact risk.

Risk Matrix for UCB and UCSF BearBuy Implementation									
		Probability			Impact				
Risk ID	Risk	L	M	H	L	M	H	Rating	Risk Owner	Mitigating Recommendation
1	Project team does not understand project vision, objectives, and desired outcome		X				X	6	Ron Coley Jim Hine	Executive sponsors to reiterate project vision to project team, confirm understanding and team commitment.
2	Campus stakeholders lack confidence in success of project, low adoption.		X				X	6	Vanessa Wong Jon Conhaim	Conduct outreach, understand user needs, and will validate user requiren ensure meeting their needs.
3	Commitment of effort (%) in functional resources are inadequate.		X				X	6	Ron Coley Jim Hine	Secure functional resources as top priority.
4	Technical resources lack confidence project will be a success due to experience in BFS and that the project is deadline driven.			X			X	9	Ron Coley Jim Hine	Restore confidence by demonstrating solutions are being implemented ba users' needs and feedback.
5	Ineffective change management, training approach, inappropriate level of communication and wrong target audience.			X			X	9	Vanessa Wong Jon Conhaim	Fill Change Manager position asap and plan an aggressive and effective management strategy. Begin executing change management activities an users communication.
6	SciQuest team is not responsive; does not deliver tasks on time.		X				X	6	Jim Hine	Escalate to executive level of SciQuest to correct situation by augmenting resources both in design/build and technical support.
7	Liens are not correct related to ineffective PO Export integration (e.g. Change Order, chartfields)		X				X	6	JR Schulden Jane Wong	Engage and leverage Skybridge PeopleSoft expertise to achieve seamles integration to SciQuest.
8	Project level of effort and timeline are underestimated, resulting in unrealistic expectation, false sense of slippage and harm in team credibility.			X			X	9	Vanessa Wong Jon Conhaim	Re-align project schedules according to realistic deadlines and SciQuest plan. Estimate number of hours or level of effort for each task.
9	Team has knowledge gap in customizing PeopleSoft to integrate to SciQuest.	X				X		2	Skybridge Global	Consult with Skybridge Global on best approach and guidance on integra points.
10	Program management support (consultants) lack expertise and experience in implementing in client environment of similar size and complexity.			X		X		6	Derek Smith (Huron)	Augment the consulting team with consultant with the right expertise. Eva performance and take corrective actions as necessary.
11	Progress and project rollout at different pace between two campuses.			X		X		6	Ron Coley Jim Hine	Stay in lockstep as much as possible. Establish contingency plan and roll strategy.
12	Inability to share commonality in business processes, configuration, workflow, catalog strategy.			X		X		6	Ron Coley Jim Hine	Staff project members with thorough knowledge in procure-to-pay busines process, systems, and with broad view of organizational goals to impleme

Where do we go from here?

- Shared Service Centers

- Re-engineered organization (demand, design, deliver)

- IT shifts more focus to a consultative role to the business

- Defining governance and funding for common good

- Robust program management function

Discussion & Questions