Building Really Big Homegrown Enterprise Software from Scratch

UNIVERSITY OF ILLINOIS
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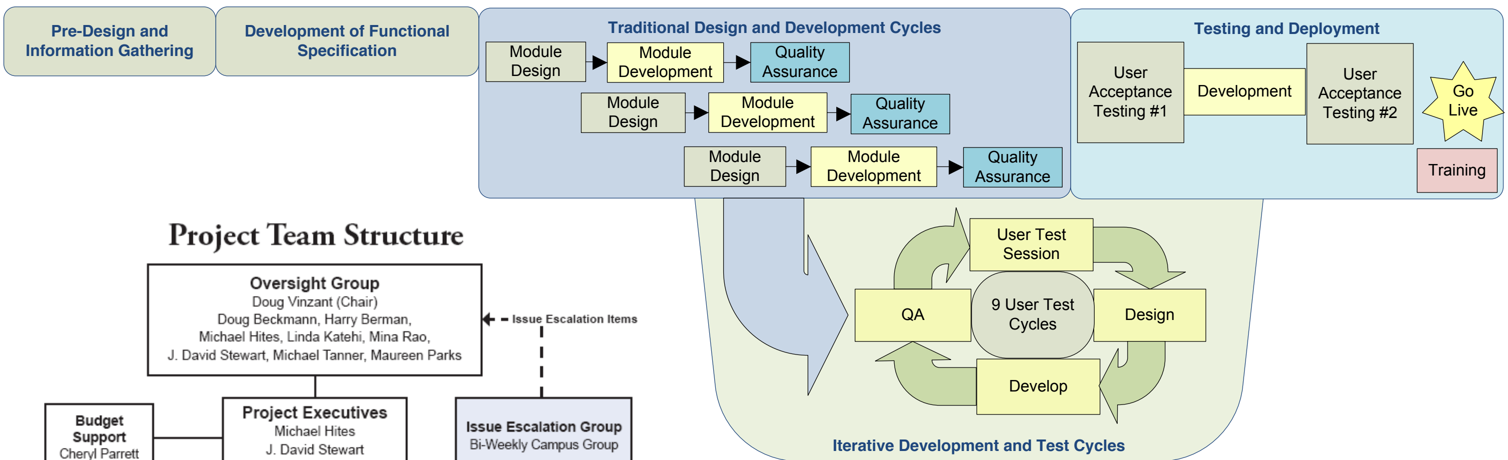
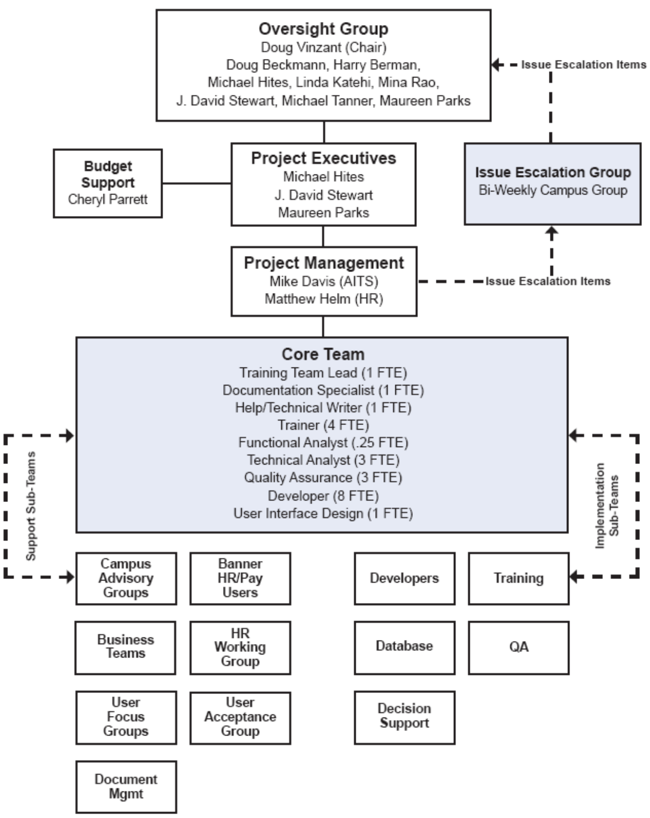
EDUCAUSE Midwest Regional Conference 2009

Following a dissatisfying experience with a new HR system roll out, the University of Illinois designed a new web-based front end for its ERP's HR component. This successful project required a three-year commitment from HR and IT and resulted in better workflow, intuitive data entry, increased satisfaction, and a new collaborative software development methodology.

Development Life Cycle



Project Team Structure



Key Implementation Strategies

- **"The Magic 162"** Have defined units of scope that help identify and divide the work initially and then refocus in on the most critical functions of the system. This was done by first defining the system in terms of "modules" then working within these module areas to refine application functionality. Finally the 162 key scenarios were identified which provided a story of how the modules work together as well as a measuring point as to whether the product was working or not.
- Management commitment. Strong commitment from top management to see this project to completion. The drain on resources (developers, analysts, trainers, end users) for this project was substantial.
- Flexible and iterative development methodology. The testing cycles and user involvement needed was absolutely critical for defining all of the requirements and keeping the users close to the product throughout the project.
- A single source of truth. Have a central repository for tracking changes, defects, and issues. It served as the system of record for requirements in many ways and provided metrics to track progress and how far we still have to go.
- Maintain fallback positions. Flexibility and other options were needed to adjust dates, change scope, and provide a safety net for users to feel comfortable in acceptingthe product along the way and allowing them to move forward.

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Project Facts:

Project Duration: 5+ years
Project Budget: $4.7 Million
Size of User Base: 700+ users
Number of Departments: 63
Number of Project Participants: 350
Number of Development Hours: 75,000+
Size of Application: 16 Modules with over 94,000 lines of code

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Feature Comparison ECOS, Banner, and HRFE

System	Legacy Payroll	UFAS	SAS	ECOS 1 1996	ECOS 2 1997-98	ECOS 3 1999-02	SCT BANNER	HRFE
Feature								
	30	10	6	15	20	25	800+	50
				?	~45	23		3
Interface	Batch	Batch	Client	Client	Client	Client		
EAI and Enterprise Integrated							Y	Y
Org Structure Codes	Camp/Coll/Dep		ssn	ssn	ssn	ssn	7 level org code	
Finance Codes	UFAS acct #						6 part FOAPAL	
Search for Employee				Y	Y	Y	Y	Y
User Preferences								Y
				Y	Y	Y		Y
								Y
								Y
Appointment Info				Y	Y	Y		
Document Attachment								Y
							Y	Y
Work Schedules							Y	Y
Transaction Types				18	21	24	0	12
Wizards				0	0	0	0	9
Post Apply processes				0	0	0	0	2
Demographic Person Info				Y	Y	Y	Y	Y
Separation Form					Y	Y		Y
LOA Form						Y		
Work History					Y	Y	Y	Y
New Employee				Y	Y	Y		Y
Change Employee Group					Y	Y		Y
Salary Calculator						Y		Y
udit Trail / Transaction History				Y	Y	Y		Y
Full View				Y	Y	Y		Y
				1	1	1		139
mic Routing / Request Access								Y
Multi-org Routing				Y	Y	Y		Y
SendTo				Y	Y	Y		Y
Group			Y					Y
								Y
Alert Messages Admin								Y
Reports				Y	Y	Y		Y

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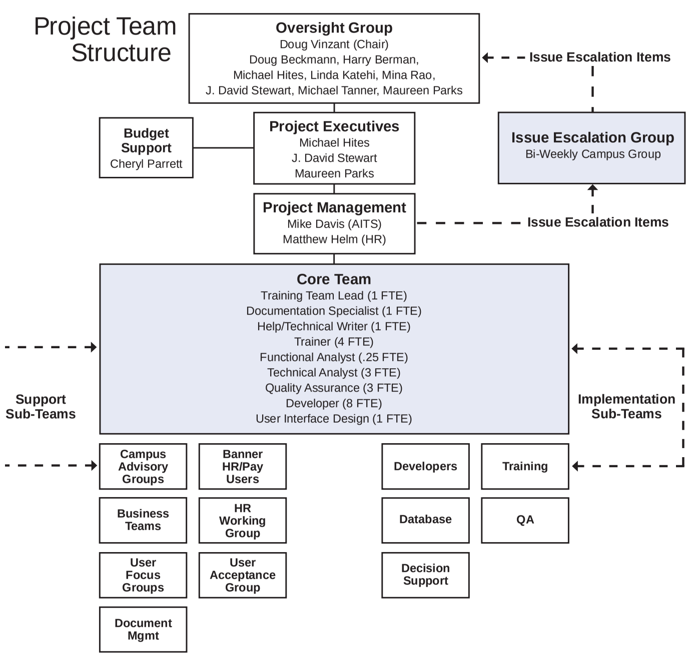

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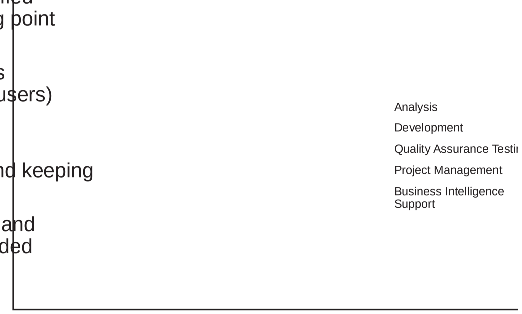
Breakdown of Project Team Hours



Departments, Units, and Colleges Involved in User Design and Testing Sessions

IC O"ces:

UIUC O"ces:

UIS O"ces:

User Testing Session

HR Front End Project Budget Breakdown (as of 12/1/08)

	Baseline Budget Commitment	Actual Expenditures
	$216,000	$175,875
Resources		
	$3,178,260	$2,354,959
HR Project Resources	$481,521	$610,117
Training Resources	$527,520	$395,419
Decision Support Resources	$77,926	$27,765
	$1,086,967	$1,033,300
Logistics		
Hardware	$112,624	$126,403
Software	$50,000	$17,946
Communications	$25,000	$23,967
Travel	$50,000	$72,269
Miscellaneous	$44,000	$9,147
Total Logistics	$281,624	$249,733
Project Totals	**$4,762,851**	**$3,813,867**

Project Tracking Report