

Project Management in Higher Education

*Becoming an indispensable asset to your institution
while burnishing your resume*

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Project Management *(textbook definition)*

Project management is the application of processes, methods, skills, knowledge and experience to achieve specific project **objectives** according to the project acceptance criteria, within agreed parameters.

Project management has **final deliverables** that are constrained to a finite timescale and budget.

[Definition from APM Body of Knowledge 7th edition](#) 



Project Management

(vis-à-vis just “management”)

A key factor that distinguishes project management from just 'management' is that it has a final deliverable(s) and a **finite timespan**, unlike management - which is an ongoing process.

Because of this, a project professional needs a wide range of skills; often technical skills, and certainly people management skills and good business awareness.

[Definition from APM Body of Knowledge 7th edition](#) 



Project Management

(simple English definition)

Project management is the way a person organizes and manages resources that are necessary to complete a [project](#). People that manage projects are known as project managers.

A [project](#) is a piece of work which is not a [process](#) or an operation. It has a start, an end, and goals. Projects can be very simple, like organizing a party; or very complex, like building a space rocket.

The [management](#) of a project requires special skills. Project managers must ensure that the project is delivered within the existing limitations. These limitations can be time, cost, people, risk, and many more.

Source: simple.wikipedia.org/wiki/Project_management



History of Project Management

You might think of project management as a relatively new discipline, but actually humans have been managing projects since before the Great Wall of China,



History of Project Management

... since before the Roman aqueducts,



History of Project Management



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- . . . since before the pyramids of Giza, and likely before that.
- It's inconceivable to think that the pyramids were built in an ad hoc manner. Rather, you can bet there were plans, schedules, teams, budgets and everything we'd recognize today as project management.

History of Project Management

Fast forward a couple thousand years, and the more standardized discipline of project management starts to really emerge in the 1950s. By that time, many industries had implemented structured processes for management and manufacturing.

Henry Gantt's [Gantt chart](#) was already in use and a popular choice for scheduling, and the Dupont Corporation added to the knowledge of scheduling by developing the [Critical Path Method](#) in 1957, which helped people understand which task on the plan had the least flexibility around the dates.

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History of Project Management

From the 1950s on, people carried on managing projects for years, often using custom methods and designing processes themselves.

That changed when *A Guide to the Project Management Body of Knowledge (PMBOK® Guide)* from [The Project Management Institute \(PMI\)](#) was accredited as an [ANSI](#) standard in 1998, although PMI had been founded quite a few years prior in 1969.



History of Project Management

The last few years have also seen big changes in project management. For one thing, there's now an [ISO](#) Standard for project management (IS21500) which came out in 2012.

But the biggest change of all has been a shift away from learning about scheduling and the technical skills for managing projects to a recognition that *people* matter on projects *[surprise!]*.



History of Project Management

Traditionally, professional project managers (PMP) needed to demonstrate core skills in technical project management.

Now they are required to demonstrate broader skills in business management such as strategy and customer relations; or leadership skills such as coaching and emotional intelligence.

Today's project managers are challenged to be more like mini-CEOs, with abilities to be both tactical and strategic across the spectrum of the project.



Top Ten Competencies for Learning [Project] Management

1. Communication skills
2. Leadership
3. Planning
4. People skills (*what does this mean, exactly?*)
5. Risk management/conflict resolution/problem solving
6. Negotiating
7. Decision-making skills
8. Team building
9. Technical skills (*relevant to the industry*)
10. Project management methods & tools



Proj. Mgmt. in Higher Education

From article in "Inside Higher Education", by Donna Lehmann 10/31/2017

Summary: A website redesign, publication overhaul, policy/process revision – these are projects for which we must carve out time from an already-packed itinerary of regularly-scheduled programming. Bringing projects to successful completion in a higher education environment can be complicated by the culture we work in and the bureaucracy of university systems.

Some factors that require some reflection for you as a project manager . . .

- Decision by Committee
- Not Enough Bandwidth
- High Stakes and Higher Expectations



Proj. Mgmt. in Higher Education

Decision by Committee

- Number of stakeholders can be endless
- Project plans can be overridden by "politics"
- Our culture values engagement and diversity of opinions
- Such culture can also slow progress to a standstill



Proj. Mgmt. in Higher Education

Not Enough Bandwidth

- Administrative “bloat” is a red herring. Most of us have plenty to do already.
- Taking on a “project” in addition to our regular assignments is challenging.
- Team members are often asked to endure extra stress and extra hours.
- Consideration of special assignments and backfilling positions is warranted.



Proj. Mgmt. in Higher Education

High Stakes and Higher Expectations

- Delays are costly – both monetarily and emotionally (but often inevitable)
- Most of our institutions don't have time/resources for “do-overs”
- Take the time to do it right (if you don't . . .)
- Under-promise; over-deliver



Factors to Consider in Project Management

- Resources (cost), scope, timeline – the constraints
- Discipline viewed as “too corporate” by some in higher ed
- Formalizing the structure vs. ad hoc approaches
- Figuring it out yourselves or engaging a consultant
- Support from executive leadership
- Is there a vision – and if so, can it be articulated?



Matrix Management

STRUCTURE

Commonly used in organizations to share employees and resources across functions. In a **matrix management system**, an individual has a primary report-to boss while also working for one or more managers, typically on projects.

A **matrix organizational structure** is a structure in which the reporting relationships are set up as a grid, or **matrix**, rather than in the traditional hierarchy. In other words, employees have dual reporting relationships - generally to both a functional manager and a product/project manager.



Matrix Management

CHALLENGES

- The potential for participants to be conflicted between various managers and priorities
- Communication confusion between and across projects and functions
- Loss of clarity on who is responsible for performance evaluation
- No determination on responsibility for coaching and professional development
- Individual capability reduction as participants become stretched across too many initiatives
- Reduced effectiveness amongst functional teams that have been working together for some time
- Loss of organizational learning and team learning because individuals are involved for only a short duration



My First Project

[extract from my resume . . .]

Led a university-wide team to a highly visible and successful implementation of an integrated financial information system (FRS). Oversaw entire project, including functional and technical resources and personnel. Worked closely with multiple campus constituency groups to design, train, and build consensus.

Project was deemed “one of most successfully managed projects ever” by university management and outside software vendor. Subject of Case Study in how to implement mainframe accounting software at a major university.

Case study written and published by software vendor - Information Associates, Rochester, NY (1990).



My First Project

[the software tool . . .]

MacProject was a project management and scheduling business application released along with the first Apple Macintosh systems in 1984. MacProject was one of the first major business tools for the Macintosh which enabled users to calculate the "critical path" to completion and estimate costs in money and time.

If a project deadline was missed or if available resources changed, MacProject recalculated everything automatically. MacProject was published and distributed by Apple Computer to promote the original Macintosh personal computer. This was the first graphical user interface (GUI) for project management. There were many other project management applications on the market at the time, but [this tool] was the first to simplify the process by allowing the user to interactively draw their project on the computer in the form of a PERT chart.

Constraints could be entered for each task, and the relationships between tasks would show which ones had to be completed before a task could begin. Given the task constraints and relationships, a "critical path" schedule and budget could be calculated dynamically using heuristic methods.



My First Project

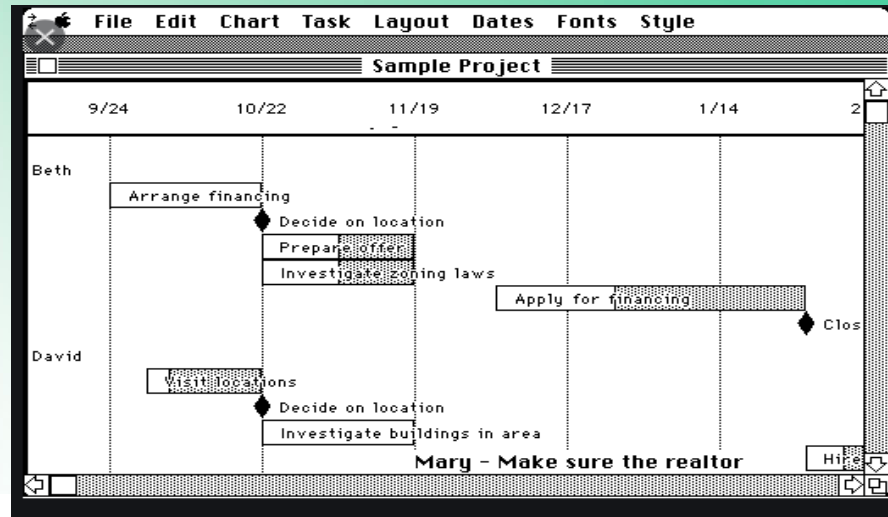
**MacProject 1.0 by Debra Willrett & Stephen D. Young of SoloSoft
Copyright 1983, 1984, Apple Computer, Inc.**

What	How
Draw and name task boxes.	Drag diagonally from the top left corner to the bottom right corner of the box. Type the task's name.
Create milestones.	Draw a task box; select it; choose Milestone from Task menu.
Connect dependent tasks and milestones.	Drag left to right, from inside the first task box to inside the task box that depends on it.
Enter Task Info for each task.	Select the task; choose Show Task Info from the Task menu. Type the duration and resources.

Next Cancel



My First Project



Five Steps for Successful Project Management

1. Set clear expectations
2. Collect the right data to measure project performance
3. Find the right resources – and support
4. Identify stakeholders
5. Communicate with other project managers

Project Constraints

- **Time:** using a collection of techniques to develop and present schedules that show when work will occur and when it needs to be finished
- **Cost:** determining how necessary funds are acquired and finances managed, including people and operating costs
- **Scope:** the work to be accomplished; putting parameters around features, functionality, and form

Outcome = Quality: assuring how fitness for purpose of the deliverables and management processes will be determined



Project Constraints

The Triple Constraint “Triangle”



Project Management Performance

Top Reasons Why Projects Fail

- Change in the organization's priorities (39%)
- Change in project objectives (37%)
- Inaccurate requirements gathering (35%)
- Inadequate vision (29%)
- Poor communication (29%)
- Opportunities & risks not defined (29%)
- Inaccurate cost estimates (28%)
- Poor change management (28%)

("Project Management Statistics" by Hannah Cohen, 2/7/2019 – www.workamajig.com)



Why was My First Project considered successful?

Five Stages of Project Management

1. Initiating
2. Planning
3. Executing
4. Monitoring
5. Closing

Developed by the Project Management Institute (PMI)



Stage 1: Initiating

This is the start of the project, and the goal of this phase is to define the project at a broad level.

This phase usually begins with a business case. This is when you will research whether the project is feasible and if it should be undertaken.

If feasibility testing needs to be done, this is the stage of the project in which that will be completed.



Stage 2: Planning

During this phase, the scope of the project is defined and a project management plan is developed.

It involves identifying the cost, quality, available resources, and a realistic timetable.

The project plans also includes establishing baselines or performance measures. These are generated using the scope, schedule and cost of a project (the three constraints).



Stage 3: Executing

This is the phase where deliverables are developed and completed.

This often feels like the meat of the project since a lot is happening during this time, like status reports and meetings, development updates, and performance reports.

A “kick-off” meeting usually marks the start of the Project Execution phase where the teams involved are informed of their responsibilities.



Stage 4: Monitoring

This is all about measuring project progression and performance and ensuring that everything happening aligns with the project management plan. Typical items that merit measurement and monitoring efforts are:

- Project Objectives
- Quality Deliverables
- Effort and Cost Tracking
- Project Performance



Stage 5: Closing

Once a project is complete, a project manager will “close” the project by:

- holding a meeting – sometimes referred to as a “post mortem” – to evaluate what went well in a project and identify project failures.
- creating a project punch-list of things that didn’t get accomplished during the project and working with team members to complete them.
- preparing a final project budget and a final project report.
- collecting all project documents and deliverables and storing them in a single place.



12 Basic Principles of Project Management

1. Projects are temporary
2. Decide whether or not the project should happen
3. Consider risks
4. Cost, time, and scope are co-dependent
5. Know what’s out of bounds
6. Develop a project plan with clear activities
7. When making assignments, consider people’s interest as much as their skills and experience
8. Let the person taking an assignment set the due date
9. There are lots of project management tools; just use what works for you
10. There can only be one (ultimately responsible person)
11. Set meeting ground rules
12. Celebrate success



The Chronicle of Higher Education, March 11, 2011 edition; Brian Coxall, author

Starting a Project

- Begin by meeting with your Sponsor
 - Ask them to identify their requirements. What is it that they really want?
 - Have the Sponsor identify their Critical Success Factors. Understand how your sponsors will define and measure “success”.
 - Determine the business needs that they are trying to address and the value that is expected.
- Discuss how ready the organization is for change and for a more structured approach to project management. Understanding the organization’s readiness and willingness to accept a little bit of structure will go a long way toward planning your roll-out strategy and reducing your frustration, ultimately leading to a more successful implementation.



Case Study

Skyline State University

Travel Policy, Procedures & Practices

Task Force

(see separate handout)

Source: Leading in Tough Times: Case Studies for Higher Education Leaders – Copyright 2012, NACUBO



Case Study

Discussion:

1. What are the key issues as you see it?
2. How would you translate your “charge” into a project plan? First steps?
3. Who is missing from the list of possible project team members/stakeholders?
4. What are the pre-requisites to determining where “potential saving” might lie?
5. If the task is to “review and recommend”, but not implement change, what do the ultimate decision-makers need to know?



Common Project Management Techniques

- Work Breakdown Structure (WBS)
- Gantt Chart
- PERT
- Critical Path Method (CPM)
- Kanban
- Waterfall/Linear
- Scrum



Work Breakdown Structure

A deliverable-oriented hierarchical decomposition of the work to be executed by the team

- A graphical representation of every task in the project
- Dividing and sub-dividing the scope into smaller and smaller parts
- Identifies major deliverables first, then “breaks down” those until a specific task is defined well enough to assign to an individual
- Can also be used to breakdown task budgets, risks, etc.



WBS Template

Project Name									
Project Manager									
Date									
Version									
WORK BREAKDOWN STRUCTURE TEMPLATE - TASKS									
Task No.	Task Description	Task Owner	Dependency	Resources Needed	Task Status	Cost	Start Date	Estimated Completion	Finish Date
1	Initiation Phase								
1.1	Set up hardware	Victor C.	Purchase	Hardware, tools, manual	Complete	\$1,000	7/23/2020	1 day	
1.1.1	Install software	Erin N.	Installation	Manual	In Progress	\$1,000	8/1/2020	1 day	
1.1.2	Format software	Pete C.	Network computers	PM	Assigned	N/A		1 day	
1.1.3	Tests software	Peggy C.	Prior tasks	Dev team	Late	N/A		1 day	
2	Planning Phase								
2.1	Task								
2.1.1	Subtask								
2.1.2	Subtask								
2.1.3	Subtask								
2.2	Task								
2.2.1	Subtask								
2.2.2	Subtask								
2.2.3	Subtask								
3	Execution Phase								
3.1	Task								
3.1.1	Subtask								
3.1.2	Subtask								
3.1.3	Subtask								
4	Control Phase								
4.1	Task								
4.1.1	Subtask								
4.1.2	Subtask								
4.1.3	Subtask								
5	Close Phase								
5.1	Task								
5.1.1	Subtask								
5.1.2	Subtask								
5.1.3	Subtask								



Gantt Chart

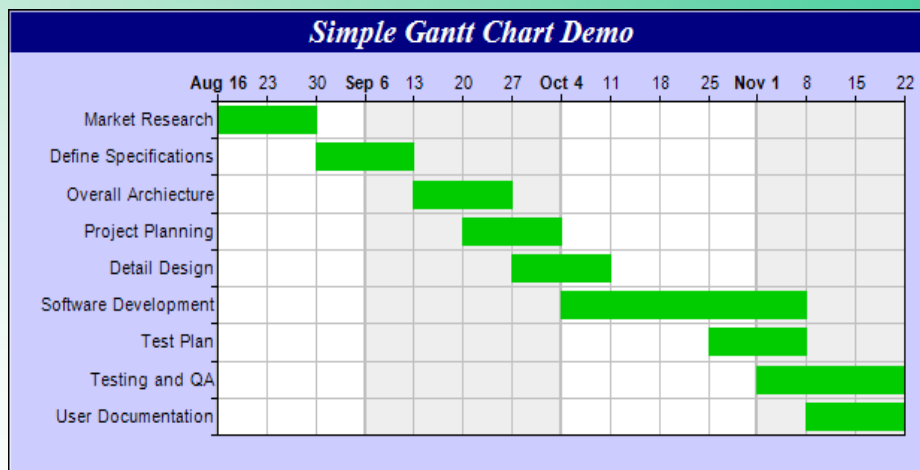
Another visual project management technique that can be combined with a Gantt Chart tool

- A visual view of tasks scheduled over time
- Includes start and end dates
- Points out dependencies, durations, and time constraints

Henry L. Gantt (1861-1919) – an American mechanical engineer and management consultant best known for his work in the development of scientific management



Gantt Chart



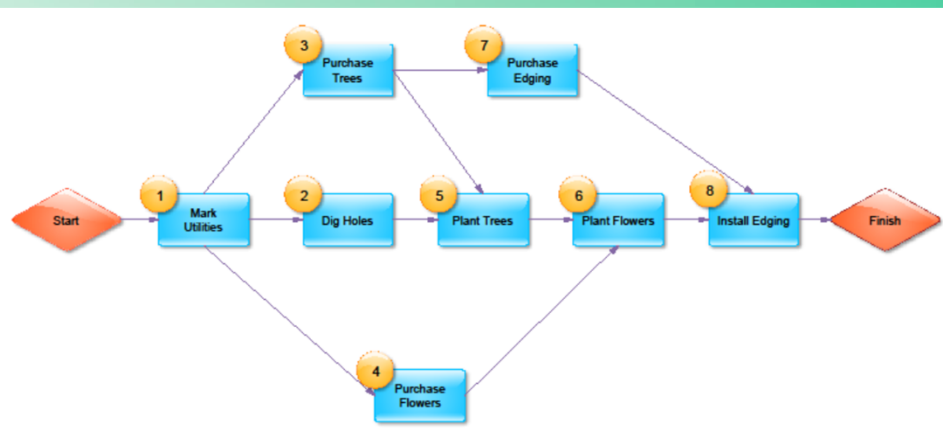
PERT

PERT stands for Program Evaluation & Review Technique

- Manages probabilities by using simple statistical methods
- Breaks down tasks and identifies those that are interdependent
- Creates illustrative “map” of the network of all activities
- Using nodes and arrows to represent events and activities, estimated times for each activity are calculated, including “slack” times



PERT Chart



Critical Path Method

- Identifying the sequence of tasks (linked by dependencies) that add up to the longest overall duration
- Longest overall duration is the “critical path” – which helps figure out the shortest time needed for completion
- Helps reduce delays by optimizing work along the critical path
- Can also help visualize dependencies, allowing for better prioritization



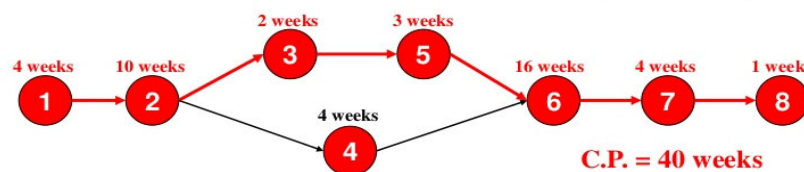
Critical Path Method

Calculation of the Critical Path

- Critical Path

– The path that takes the longest to complete

Activity ID No.	Activity Description	Estimated	Predecessors	Time (weeks)
1	Needs analysis		—	4
2	Architect plans		1	10
3	Equipment selection		2	2
4	Building permits and zoning		2	4
5	Vendor ID and equipment order		3	3
6	Construction		4, 5	16
7	Interior finish		6	4
8	Installation and setup		7	1



Kanban

Japanese for “billboard” – a scheduling system to improve manufacturing efficiencies

- Looks like a series of cards on a board, laid out in column headings of
 - To Do
 - Doing
 - Done
- Project board helps team visualize what must get done now, seeing each card (task) in the wider context of the others
- Once task is done, card is moved to the next column



Kanban

Kanban Boards for Development Team

To do	In progress	Done
<input type="radio"/> Add payment panel High 2	<input type="radio"/> Homepage design 70% 8	<input checked="" type="checkbox"/> API improvements 100% 4 Mar
<input type="radio"/> New sign up form Design 8 Apr	<input type="radio"/> Fix drop down menu High +	<input checked="" type="checkbox"/> Configure IP address 100% 9 Mar
<input type="radio"/> Update policies 7		<input checked="" type="checkbox"/> Initial client meeting 100% 2 Mar



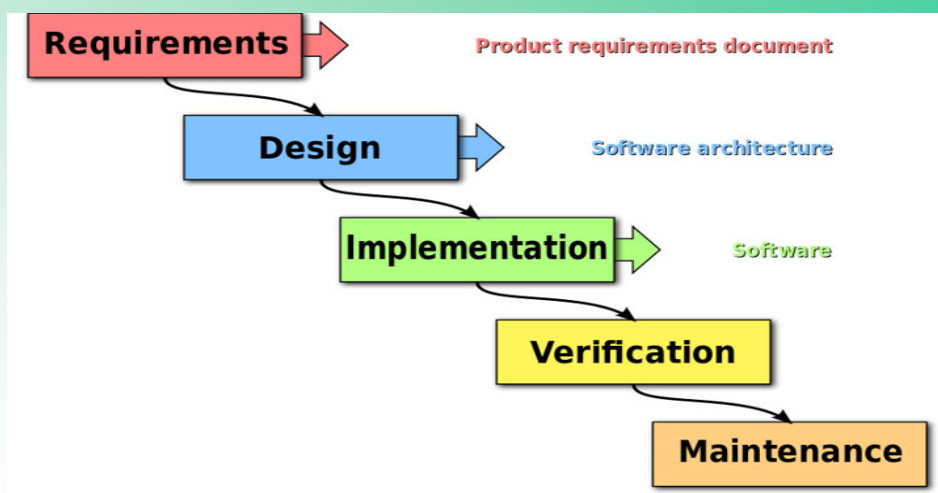
Waterfall/Linear

If you use this project management technique, activities and tasks will linearly flow through 5 phases:

- Requirements (Get all the necessary documentation)
- Design (Use a WBS to create a list of tasks)
- Implementation (Complete tasks)
- Verification (Review the deliverables)
- Maintenance (Maintain and modify if necessary)



Waterfall/Linear



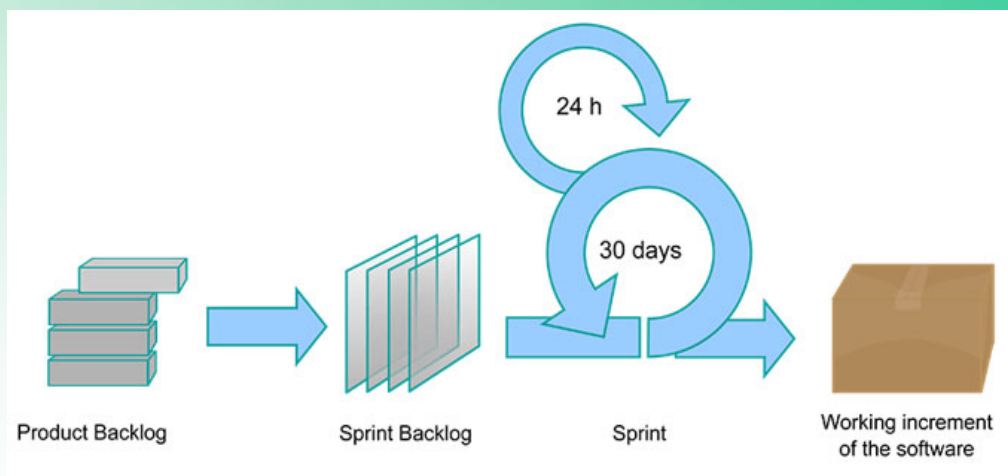
Scrum (agile)

With Scrum, you'll be working in sprints.

- During each sprint, you'll work on a particular deliverable/feature
- Sprints shouldn't last longer than 2 weeks, and you should hold daily status update meetings
- After the sprint, you should hold a review meeting, make suggestions for improving the next sprint, and keep going



Scrum (agile)



Working with Vendors

Take my advice . . .

- “Best in Class” may be a true claim, BUT the best thing out there may still not be very good (or be a bad match for you)!
- Vendor “sales” people only understand what their product does generally (basic functionality). They rarely know anything about the inner-workings of the product. Their job is to sell. Double/triple check ALL promised functionality.
- Before making a purchase decision, talk to the vendor’s technical and customer support people, as well as front-line people at other institutions who actually are using the product already.
- The devil is always in the details. Be thorough and persistent, and ask a LOT of questions. Make sure you’re satisfied with the answers.
- Don’t be pressured to buy based on “today-only” sales price pitches



Working with Consultants

Take my advice . . .

- Make sure you understand WHY you are engaging a consultant.
 - Is there a lack of expertise – either real or imagined?
 - Is there a lack of risk acceptance – a potential “fall guy” to take blame?
 - Is there a lack of money: hire new or outsource – apparently not?
- You’re the one who is going to have to live with the results on a daily basis – not the consultants (they’ll be long gone)
- Just because a consultant recommends something, you’re not obligated to accept their recommendation.
- Consultants have a “methodology” that they are trained to use. Often their methodology and management style will clash with institutional culture.
- Be very clear in advance on what roles they will play vis-à-vis internal staff.



Working with Consultants



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Working with Sponsors

Take my advice . . .

- They have to be “engaged”, not just verbally supportive
- They have to be high within the institution – VP level or equivalent
- They have to be willing to “fight” with consultants and vendors, when necessary
- They have to be independent; not take sides
- They have to be willing to share accolades and criticisms
- They have to be an “evangelist” with the Cabinet and the Trustees
- They have to trust the data and their people

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Working with Sponsors



Working with the Team

Take my advice . . .

- You'll need both volun-teers and volun-tolds
- You'll need change champions
- You'll need members from all levels and from all areas affected
- Make sure members understand and accept the commitment; and that their supervisors are supportive
- Projects are stressful; check in w/ members often



Some thoughts on Change and Change Management

CHANGE

- The technical pieces (although challenging) are often the easiest
- Most of us resist change
- Most of us realize change is proliferous and inevitable
- Change initiatives need to be compelling, because they will be difficult
- Change – just for change sake, will often breed confusion and resentment



Some thoughts on Change and Change Management

CHANGE MANAGEMENT

- Build the case for change
- Articulate the objectives
- Obtain executive support
- Communicate constantly
- Clarify roles and responsibilities
- Manage expectations (under-promise; over-deliver)
- Understand what is absolute; what is flexible/negotiable



Project Management in Higher Education

Questions/Comments?

Resources:

The Project Management Institute

www.pmi.org

The Project Manager

www.projectmanager.com

Assoc. for Project Management

www.apm.org.uk

