COMP 918: Research Administration for Scientists

Volume 3: Management in the Academic and Scientific Enterprise

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These materials were prepared for the "Research Administration for Scientists" course by Timothy L. Quigg, Lecturer and Associate Chair for Administration, Finance and Entrepreneurship, Computer Science Department, UNC-Chapel Hill. They are published in four volumes: Volume 1 – Research Funding, Grantsmanship, and Research Ethics, Volume 2 – Sponsored Research Agreement Types, Budgeting, FAR, and OMB Circulars A-21 and A-110, Volume 3 – Management in the Academic and Scientific Enterprise, and Volume 4 – Intellectual Property: Patents, Copyrights, Trademarks and Trade Secrets.

Tim created and taught this course each year from 2001-2013. More than 600 graduate students, post-docs, faculty and staff from over 40 UNC-Chapel Hill departments have taken the course, many for credit and many others as auditors. In 2009, the Computer Science Graduate Student Association honored Tim with the Excellence in Teaching Award for his work with this course!

COMP 918: Research Administration for Scientists

PI and Department Research Administration Responsibilities for Financial Planning

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Research Administration for Scientists

Remember...

- Awards are made <u>to an organization</u> in the <u>name</u> of a Principal Investigator.

- The PI has primary responsibility for <u>project performance</u> and the university has rather complex <u>compliance</u> responsibilities.

- But the PI also has many compliance responsibilities including:

  - Financial compliance, account management and determining the "allocability" of all expenditures.

  - Maintaining high ethical standards in the conduct of research.

  - Following IRB protocol and standards for lab safety and the handling of hazardous materials.

Additional responsibilities may include:

- mentoring students and other trainees,

- effort certification for project team,

- intellectual property tracking,

- asset management and

- various personnel functions including hiring/firing, promotions, disciplinary responsibilities, staff training, and the tracking of earned leave (both annual and sick).

Today we will focus on the important area of financial planning!

Many successful PIs have developed labs with rather large staffs - students, post-docs and employees. The annual payroll may be quite large. And the responsibility for funding the lab is on the PI.

You may not have planned it when you selected science as a career, but one day you may be running a lab that looks a whole lot like a "small business!"

PIs must plan for the future by defining the scientific direction of their lab and they must plan for the financial stability of their lab by seeking appropriate funding!

The good news: There are usually accountants and administrators within the department who can assist with financial matters.

The bad news: Most accountants and department administrators are good at providing information on current financial status, but not so good at spotting trends and planning for the future.

Four Steps in Financial Planning

1. Determine current <u>financial status</u>. Two questions must be answered:

   - Where are we now? This requires an accurate current accounting by project and overall.

   - Where are we heading? Projection of future growth (or decline) based upon year-to-year comparisons and other key indicators.

2. Set <u>financial and program goals</u> based upon current obligations and desired future scientific endeavors.

3. <u>Measure performance against goals and make corrections</u>.

4. Repeat process!

Step 1: Determine current financial status

<u>Account-Specific Financial Reports</u>: In order to properly manage individual accounts, accurate and timely financial reporting is required. These reports also satisfy A-110 compliance rules.

<u>Consolidated Financial Reports for Lab</u>: All active lab accounts should be consolidated into a single financial statement for the lab in order to identify key year-to-year trends. This will help to determine if the enterprise is growing or shrinking.

<u>Note</u>: Department Chairs, Deans, Center Directors and various other academic administrators would benefit by doing similar planning!

Step 1: Determine current financial status

Five Useful Tools:

1. Monthly Account Status Reports – Usually produced by department accounting staff.
2. Burn Rate Charts
3. Personnel Funding Chart
4. Book-to-Bill Report
5. F&A Recovery by Space Report

Monthly Account Status Reports

To be useful, these reports must be <u>current</u> and they must encumber all future expenses (especially personnel costs).

<u>Current</u>: Good accounting systems require that expenses be entered at the time an obligation is incurred. Unfortunately, many university systems have significant delays between the time an obligation is incurred and the time it is posted.

"Accounting systems" include the computer software plus the set of rules/policies defining transactions and determining when and how transactions are entered.

The common complaint – "the computer won't let me do it" usually concerns a policy, not the computer program!

Monthly Account Status Reports

To be useful, these reports must be current and they must encumber all future expenses (especially personnel costs).

Encumber: In accounting an *encumbrance* is a management tool used to reflect future commitments in the accounting system. To prevent overspending, these obligations must be subtracted from available balances. Examples include:

- Equipment – Equipment is often competitively bid. It should be encumbered when the request to purchase is made. Unfortunately, many university systems don't enter until a PO is issued.

- One-time payments – Some bills are only paid annually or semi-annually. They must be encumbered at the beginning of the year and then expensed when they are paid.

- Personnel – Future personnel obligations (the largest portion of most budgets) must be encumbered in anticipation of future payroll actions.

Sample Account Status Report

Account Budget Report

Selection Criteria:
Object Set=UNC, Account=5-35937

Report Run On: 12/10/2012 11:15:31AM

Account	5-12345	DE - Kalman Filter for Real-Time Responsiveness
PI Name	.M Importante	
Current Bud	9-1-09 to 9-30-13	

Budget Code	Description	$ Budget	$ Encumbered	$ Expensed	$ Balance
1000	Personnel	130,759.00	7,932.75	122,825.35	0.90
1800	Faculty/Staff Benefits	20,157.00	847.10	19,238.25	71.65
2000	Supplies & Materials	7,302.00	0.00	4,036.60	3,265.40
3100	Travel	14,488.00		13,778.08	709.92
3130	Foreign Travel	18,100.00		16,743.47	1,356.53
3400	Printing/Binding	122.00			122.00
3600	Freight & Express	200.00		10.00	190.00
3800	Computer Services	14,445.00	1,201.05	9,825.27	3,418.68
3900	Miscellaneous	282.00	19.13	262.00	0.87
6573	Trainee Tuition & Fee	3,917.00	1,958.50	1,958.50	0.00
6577	Grad Asst Tuition	12,948.00		11,761.82	1,186.18
8900	Indirect Costs	97,782.00	9,090.44	88,691.56	0.00
Total for Account: 5-35937		**320,502.00**	**21,048.97**	**289,130.90**	**10,322.13**

Employee Salaries

Name /PID	Start Date	End Date	Cost Center	Salary	Total Salary	FTE	Title
Gary Bishop	6/30/10	6/30/10	NONE	13,944.00	13,944.00	1.000	Professor
7018-76731							
	9/1/09	6/30/10	NONE			0.200	Res. Assoc. Prof.
	10/1/10	6/30/11	NONE			0.100	Res. Assoc. Prof.
	7/1/10	9/30/10	NONE			0.200	Res. Assoc. Prof.
	7/1/11	8/31/11	NONE			0.200	Res. Assoc. Prof.
	9/1/12	9/30/12	NONE			0.900	Res. Assoc. Prof.
	12/1/12	12/1/12	NONE			1.000	Res. Assoc. Prof.
	9/1/09	5/15/10	NONE			1.000	Research Assistant
	5/16/10	8/7/10	NONE			1.000	Research Assistant
	8/17/10	5/15/11	NONE			0.500	Research Assistant
	5/16/11	8/7/11	NONE			0.500	Research Assistant
	8/17/11	5/15/12	NONE			0.700	Research Assistant
	8/17/12	5/15/13	NONE			0.500	Research Assistant
7145-64634							

- Account Number
- Dates
- PI Name
- Budget Code
- Budget
- Encumbrances
- Expensed
- Balance

Note: Salaries are encumbered through either the end date of the project or the end date of the payroll action, whichever comes first!

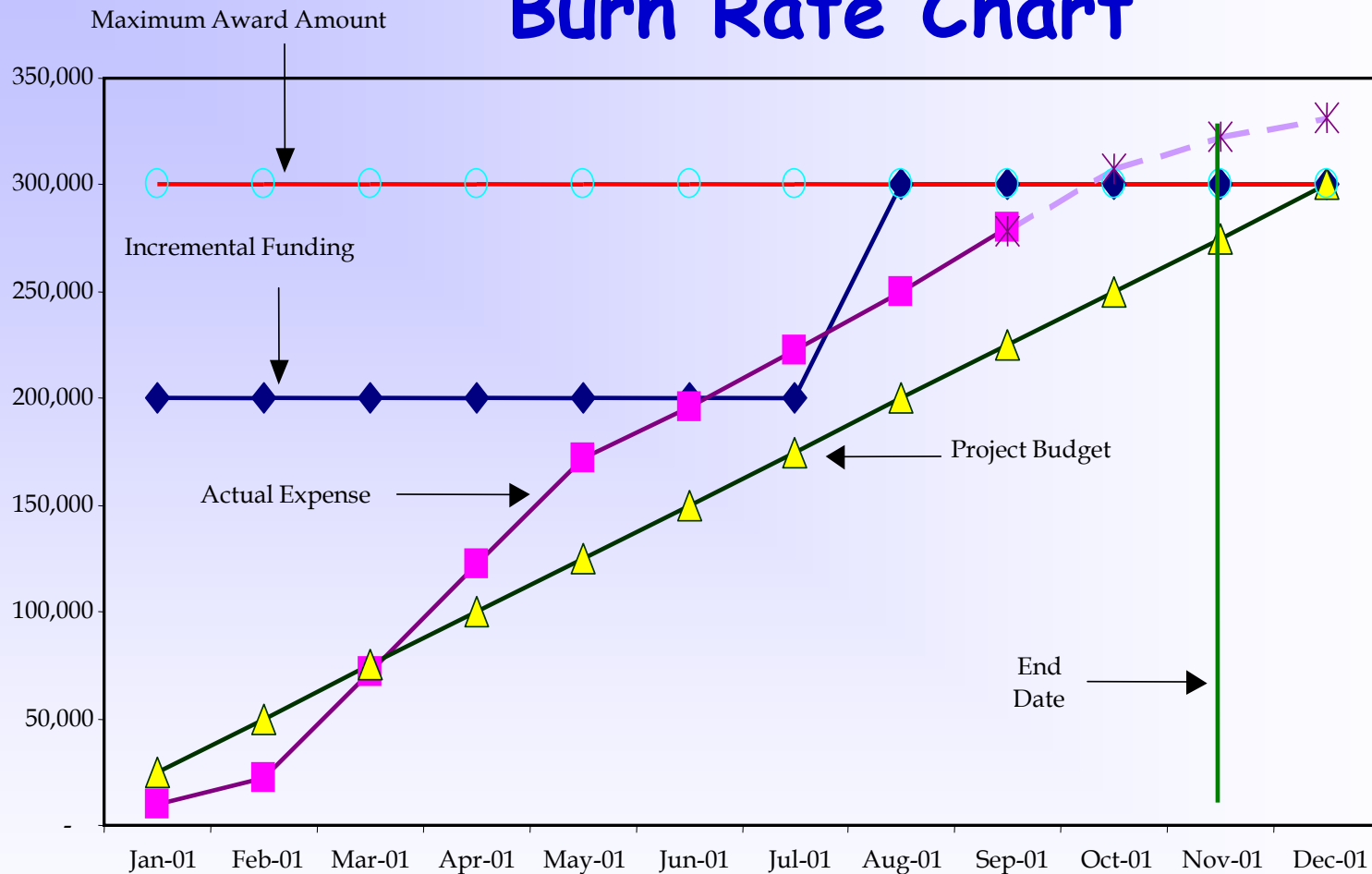*Research Administration for Scientists*

The "Burn Rate" Chart

A useful tool for tracking the rate of expenditure against budget and against current funding level.

Questions:

1. Are funds being burned (spent) too quickly or too slowly?

2. When will a new funding increment be needed?

3. How does the actual burn rate compare with the approved budget and the statement of work?

4. Are expenditures in a "ramp-up", "steady-state" or "phase-down" stage?

5. Is the fund balance adequate to meet all future obligations?

Burn Rate Chart

Maximum Award Amount

Incremental Funding

Actual Expense

Project Budget

End
Date

350,000

300,000

250,000

200,000

150,000

100,000

50,000

-

Jan-01 Feb-01 Mar-01 Apr-01 May-01 Jun-01 Jul-01 Aug-01 Sep-01 Oct-01 Nov-01 Dec-01

Yellow line tracks project budget using a straight line method. What changes would make it more useful?

Personnel Funding Chart

A useful graphic tool for planning and documenting complex personnel funding patterns over time.

Challenge: To develop, consistent with budgeted effort and available funds, multi-year funding plans for each employee (student, post-doc, research faculty, lab staff) who is either partially or fully funded from "soft money" (grant) sources. Summer support for 9-month faculty may be included in this process.

It is quite daunting to develop these multi-year funding plans and even more difficult to communicate problems (gaps in funding) to others using only financial reports!

I developed the following chart for use in this situation. Remember - a picture is worth a thousand words!

Personnel Funding Chart – Initial Planning

Name	Funding	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Washington, G.	GRIP 24%										14th		
Lincoln, A.	DOE-F 15%												
	GRIP 60%										14th		
	MIP 10%												
	STC/Teleimmersion 15%												
Jefferson, T.	DOE-F 12.5%												
	I-FLOW 50%												
	NANO 25%												
	STC/Teleimmersion 12.5%												
	DOE-F 50%												
	STC/Teleimmersion 50%												
	100%												
Clinton, B.	GRIP 100%										14th		
Ford, G.	DOE-F 20%												
	STC/Teleimmersion 13%												
Eisenhower, D.	MIP 100%												
Johnson, L.	STC/Teleimmersion 100%												
Truman, H.	GRIP 100%										14th		
Reagan, R.	MIP 100%												
Roosevelt, F.	DOE-F 30%												
	I-FLOW 20%												
	NANO 10%												
	MIP 10%												
	STC/Teleimmersion 30%												

Personnel Funding Chart – Initial Planning

Name	Funding	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Washington, G.	GRIP 24%										14th		
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	I-FLOW 50%												
	NANO 25%												
	STC/Teleimmersion 12.5%												
	DOE-F 50%												
	STC/Teleimmersion 50%												
	100%												
Clinton, B.	GRIP 100%										14th		
Ford, G.	DOE-F 20%												
	STC/Teleimmersion 13%												

Entries are made on this chart <u>after</u> payroll actions have been entered, so we know the action is consistent with the approved <u>project budget</u> and we know there are <u>adequate funds</u> in both the personnel line and overall budget.

Personnel Funding Chart – Initial Planning

Yellow means the project is expected to be extended, but it hasn't been yet. Once the extension is received and the payroll actions are processed, the yellow entry is changed to green.

Red means the project is coming to a "hard end", so either new funding must be identified, the employee's hours cut or in the extreme case, a lay-off must be planned!

As this report is used more frequently in an organization, there is a tendency for management to automatically focus on the red!

Personnel Funding Chart–Actual Expenses

Name	Funding	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Larry	DOE-F 20%	▓											
	STC 8%	▓											
	MCNC 5%	▓	▓	▓									
	STC 28%		▓	▓									
	MCNC 33%				▓	▓	▓						
	ITR-F 14%							▓					
	(NEW)DOE-F 14%							▓					
	ITR 5%								▓	▓	▓	▓	▓
	ITR-F 38%								▓	▓	▓	▓	▓
	(NEW)DOE-F 38%								▓	▓	▓	▓	▓
Curley	TRUST 20%	▓											
	STC 60%	▓	▓										
	STC 35%			▓	▓	▓	▓	▓					
	MCNC 5%			▓	▓	▓	▓	▓					
	GRIP 20%			▓	▓	▓	▓	▓	▓	▓	▓	▓	▓
	ONR 20%	▓	▓	▓	▓	▓	▓	▓	▓	▓			
	ITR-F 20%			▓	▓	▓	▓	▓	▓	▓			
	(NEW)DOE-F 5%			▓	▓	▓	▓	▓					
	ITR-N 35%							▓					
	KECK-OVHD 35%								▓	▓			
	ONR 10%										▓	▓	▓
	ITR-F 40%										▓	▓	▓
	(NEW)DOE-F 30%										▓	▓	▓
Moe	TRUST 10%	▓											
	STC 72%	▓	▓										
	MCNC 18%		▓	▓									
	STC 32%			▓									
	DOE-M 100%				▓	▓	▓						
	ONR 20%			▓						▓	▓	▓	▓
	GRIP 23.5%		▓	▓									
	(NEW)DOE-F 33%							▓	▓	▓	▓	▓	▓
	ITR 23.5%							▓	▓	▓	▓	▓	▓

Personnel Funding Chart–Actual Expenses

As new projects are funded and old ones end, the "plan" is being continually revised during the year. I make these changes as they occur to keep the chart current.

It is particularly useful to keep the June 30 versions of these charts in an easily accessible file. Detailed funding source questions can be answered easily without having to consult payroll data!

Personnel Funding Chart- Expanded

Name	Salary	Funding	Acct. #	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Kiser, S.	$150,000	State (100%)	2-32761	█	█	█	█	█	█	█	█	█	█	█	█
Lawrence, S.	$78,000	State (100%)	2-32761	█	█	█	█	█	█	█	█	█	█	█	█
Jones, T.	$85,000	State (100%)	2-32761	█	█	█	█	█	█	█	█	█	█	█	█
Vrana, S.	$150,000	State (69%)	2-32761	█	█	█	█	█	█	█	█	█	█	█	█
25%on grants		Kenan Professor (6%)	6-60024	█	█	█	█	█	█	█	█	█	█	█	█
		CISMM (10%)	5-31865							█	█	█	█	█	█
		CISMM (8%)	5-32690								█	█	█	█	█
		IBR (7.5%)	5-37125	█	█	█	█	█	█						
		IBR (9.5%)	5-37125						█	█	█	█	█	█	█
		ITR (7.5%)	5-47737	█	█	█	█	█	█	█	█	█	█	█	█
Wdowik, M.	$130,000	State (100%)	2-32761	█	█	█	█	█	█	█	█	█	█	█	█
Vargas, A.	$200,000	Federico Gil (18%)	6-62301	█	█	█	█	█	█	█	█	█	█	█	█
33%on grants		Neurosurgery (3%)	5-51788	█	█	█	█	█	█	█	█	█	█	█	█
		CS 51788 (2%)	2-32761	█	█	█	█	█	█	█	█	█	█	█	█
		DARPA (10%)	5-35751	█											
		State (45%)	2-32761	█											

By adding addition columns (salary, salary source), the chart becomes a source document for many other uses.

Book-to-Bill Reports

By comparing <u>current period</u> cumulative lab <u>expenses</u> with the <u>next period</u> (continuing projects plus newly funded projects) cumulative lab <u>funding</u>, one can spot important funding trends – positive or negative growth.

<u>Note</u>: Usually it's good to calculate the "book" line two ways: "actual" resources (funded) and "projected" resources (actual resources plus an educated guess concerning the fate of pending proposals).

<u>Macro-Trends</u>: What is the direction of overall lab funding?

<u>Micro-Trends</u>: Are some groups of projects increasing or decreasing at rates different from the overall lab?
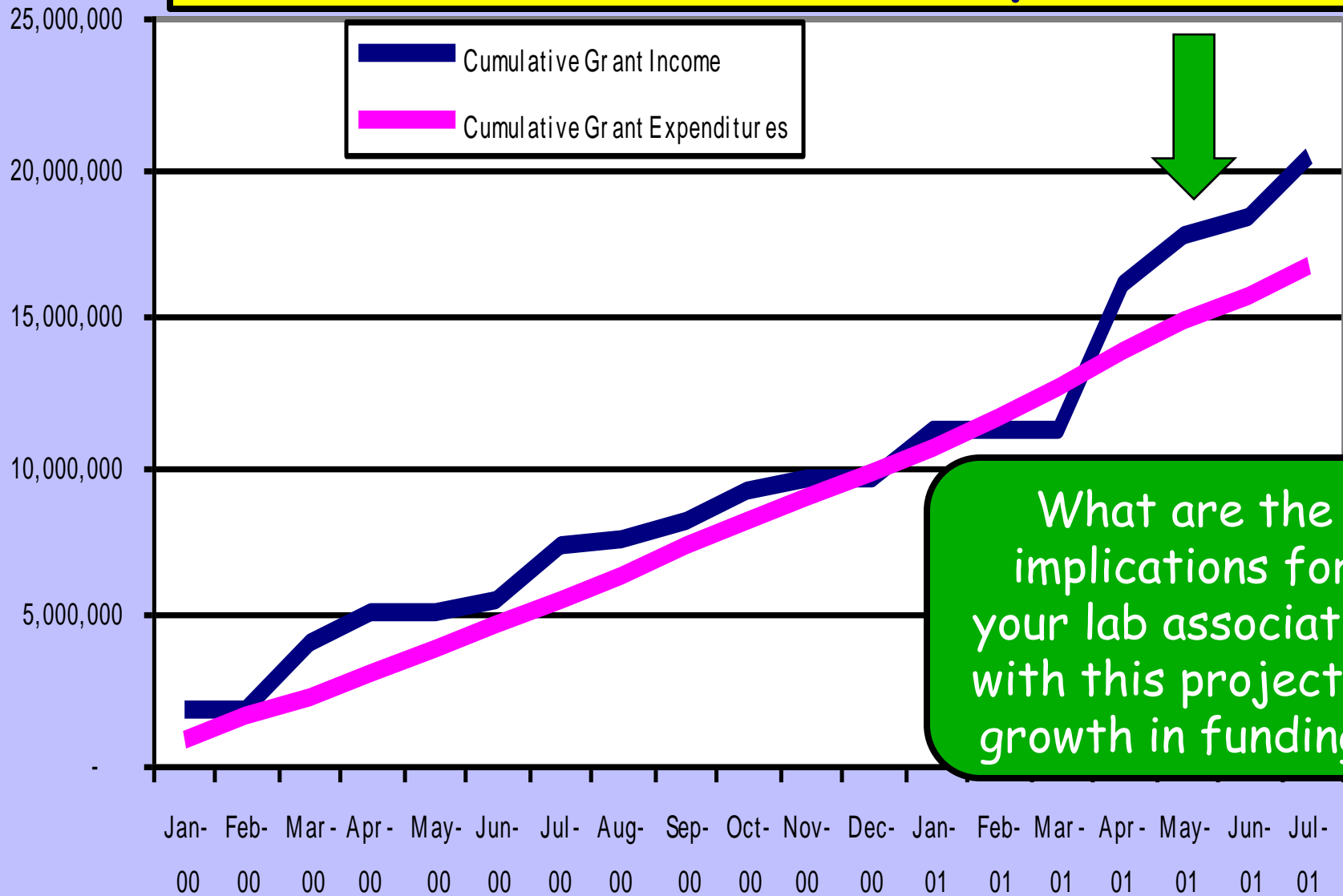
Use of Trend Data in Personnel Planning

Graduate Students – Will the number of supported graduate student be increasing or decreasing?

- Note: The decision concerning funding graduate students is made at a specific time (usually in the late summer or early fall), so it is important to know as far in advance as possible about future funding levels.

- If a commitment isn't made to a graduate student for an RA position by a certain date, he/she may accept another assistantship (teaching assistant).

- For a small project with only 1 or 2 graduate students, the loss of student effort for even one semester could put the project significantly behind.

Use of Trend Data in Personnel Planning

<u>Staff</u> – Do new positions need to be added or do any lay-offs need to occur?

- <u>New Hires</u>: The best candidates for post doc and research faculty positions will likely be available in the late spring/early summer.

- <u>Layoffs</u>: University policy will require that appropriate notice be given to the employee before being laid-off. Failure to do so could result in extra costs. Depending upon the classification of the position and the length of employment, termination expenses may need to be encumbered on the grant.

- Either adding or loosing positions will likely have implications for space planning!

Use of Trend Data in Space Planning

Next to having the right personnel, having enough of the right kind of space is perhaps the most important resource for research projects.

- Space is <u>limited</u> and <u>expensive</u> at most universities.

- Adding new space or renovating existing space to meet special project needs usually requires <u>considerable lead time</u> and a <u>compelling justification</u>.

<u>Note</u>: Negotiating with your Department Chair or Dean for additional space or specialized space is a highly competitive process. Having good data to support the need is vital.

Use of Trend Data in Space Planning

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<u>Remember</u>: Space allocation is a zero sum game. Allocating space to you means it can't be allocated to someone else.

So the competition is fierce!

Use of Trend Data to Identify Micro-Trends in Research Funding

"The devil is in the details!"

Even if overall lab funding is projected to remain constant, significant changes in the distribution of funding by "project type" may have profound impact on personnel, space and equipment needs!

Use of Trend Data to Identify Micro-Trends in Research Funding

Questions raised by significant changes in the mix of projects:

- What are the implications of these shifts on <u>space requirements</u>? More space? Change in the mix of space, e.g., less lab space, but more office space? Will specialized facilities be required?

- What are the implications of these shifts on <u>personnel needs</u>? Are special skills required that are not currently present in the lab staff? Hire a new post-doc? Research faculty? Develop collaborations with colleagues in complementary disciplines?

Use of Trend Data to Identify Micro-Trends in Research Funding

Questions raised by significant changes in the mix of projects:

- What are the implications for <u>equipment needs</u>? If specific equipment is required to support the overall direction of the lab's research (as opposed to a particular project), should the PI consider pursuing an infrastructure grant?

Use of Trend Data to Identify Micro-Trends in Research Funding

This analysis will help the PI be more proactive and deliberate about the direction of his/her research.

Specific PI goals might include:

- Growing research in a certain direction.
- Discontinuing an area of research or a type of project that is of less interest.
- Beginning to "phase down" the lab in anticipation of retirement.
- Making other significant changes!

F&A Recovery by Space Report

Some universities/departments share F&A receipts with PIs based upon the F&A dollars generated by their projects. Therefore, the PI may be interested in tracking how well different projects are performing in terms of F&A dollars generated per square foot of allocated space.

This is just one of many factors to consider when making space allocation decisions!

F&A Recovery by Space Report

Projects above the line are producing more than the average F&A recovery per square foot!

Projects below the line are producing less than the average F&A recovery per square foot!

Actual Indirect (y-axis)

Square Feet (x-axis)
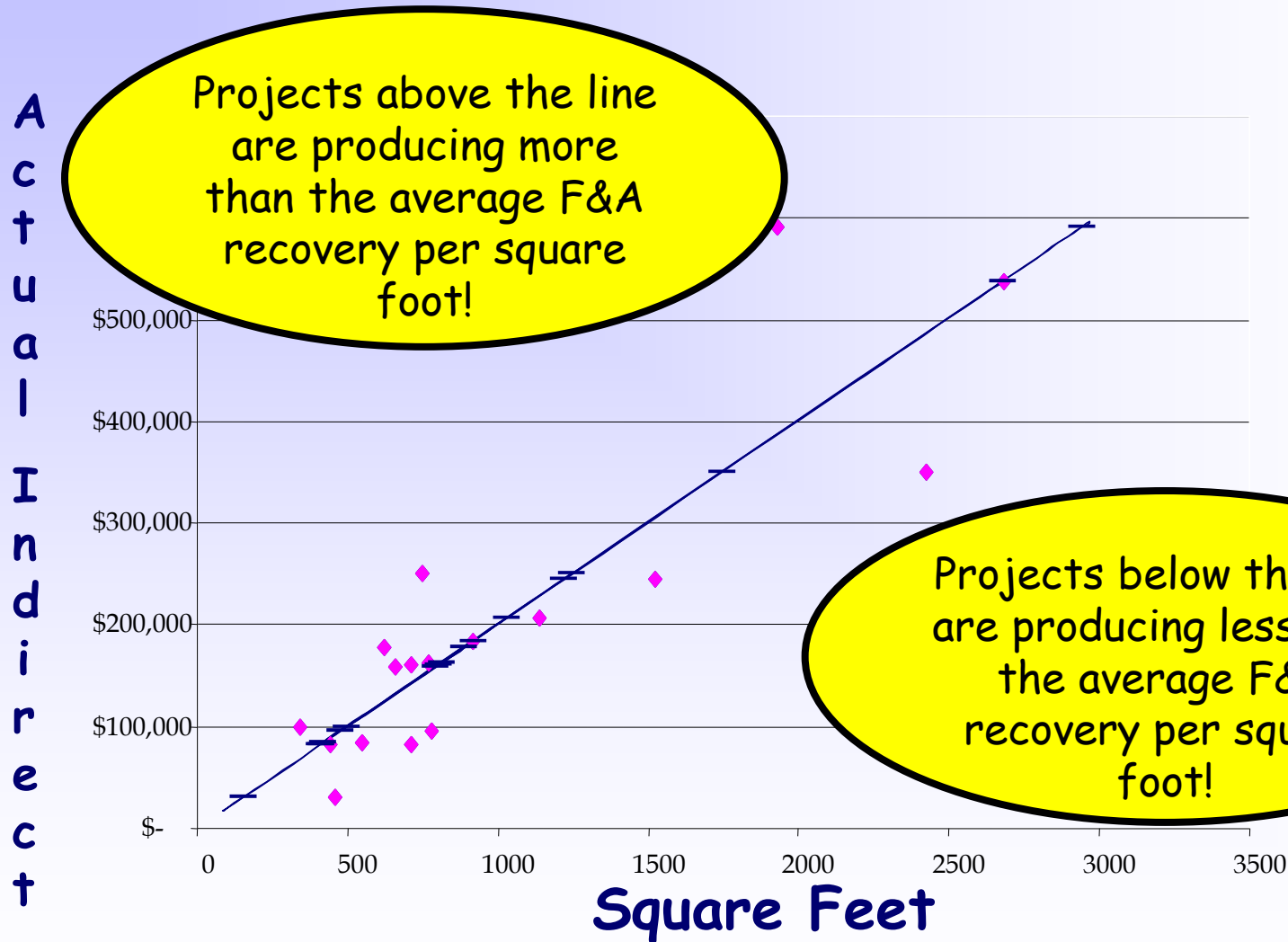
F&A Recovery by Space Report
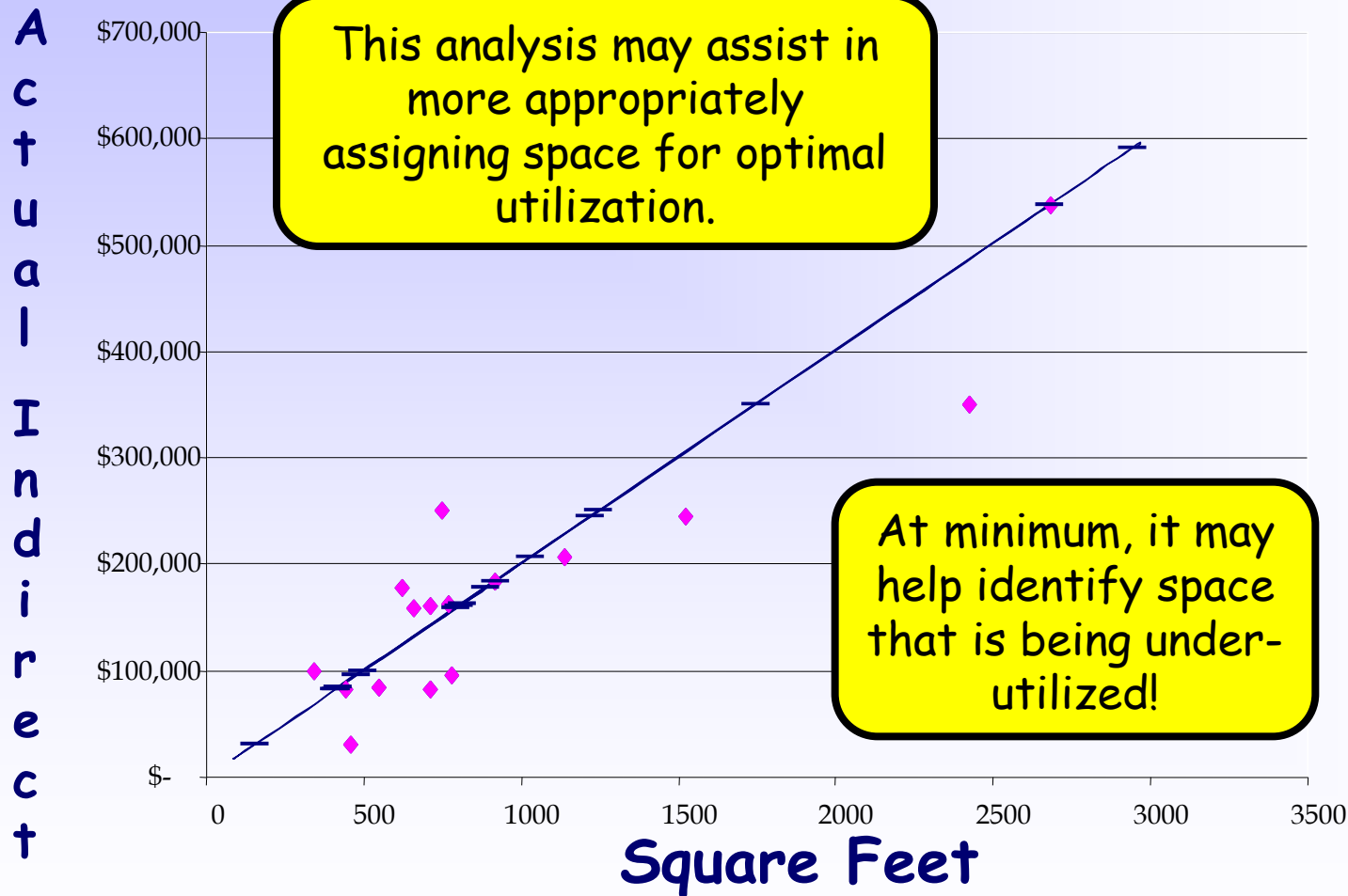
Step 2: Set financial and program goals

Step 1 analysis identified where the lab is now and based upon current trends, where it is heading.

Step 2 involves setting specific goals.

- What changes are desired in the "size" of the lab and the "mix" of research projects over the next few years?

- Set specific targets, e.g., increase the number of supported graduate students, gradually reduce funding from current levels to a specific target in 5 years, phase out work in one area and expand work in another area.

Step 3: Measure performance against goals and make corrections

Step 3 involves determining whether the current direction is the desired direction.

- Is growth occurring in the planned areas of interest?
- What strategic changes should be made?
- Should more attention be given to submitting proposals in a particular area of research?
- What actions should be taken to support the level of growth? Hire a post-doc to assist with advising students? Request additional space? Begin renovations of existing space?

Step 4: Repeat the process!

You may not have planned it when you selected science as a career, but one day you may be running a lab that looks a whole lot like a "small business!"

Developing basic financial planning skills and knowing what tools to use in what situations will enable a PI to be more proactive in planning the direction of his/her research!

COMP 918: Research Administration for Scientists

Central Research Administration Tasks and Responsibilities: UNC-Chapel Hill Case Study!

Tim Quigg, Lecturer and Associate Chair for Administration, Finance and Entrepreneurship Computer Science Department, UNC-Chapel Hill

Remember…

- As the legal recipient/contractor, the university has the ultimate legal burden for compliance.
- Under "Expanded Authority", universities are granted authority to act on behalf of the Government in certain matters, e.g., NCEs.
- The review and approval system must be independent, compliant with federal requirements and subject to audit.

University SROs must pay careful attention to rules and compliance!

But Also Remember…

- Sponsored research funding is an important metric in determining a university's position in the national rankings.

- And like it or not, rankings matter – higher ranked universities are better positioned to attract the best faculty and students.

- The "rich are getting richer" – the top 25 schools get 35% of all federal research funding, up from 31% just 4 years ago.

- And this trend toward consolidation of federal funding at the "top schools" is continuing.

- As previously stated, sponsored research funding has become a major funding source for many universities, including UNC-Chapel Hill.

- Many jobs, including those of the SRO staff, are dependent upon the on-going receipt of F&A funds derived from sponsored research.

Job Description for Director of Cost Analysis Position

"The Director's role includes a combination of management, administrative and senior level cost accounting responsibilities that must be effectively performed <u>to ensure overhead receipts continue at appropriate levels</u>."
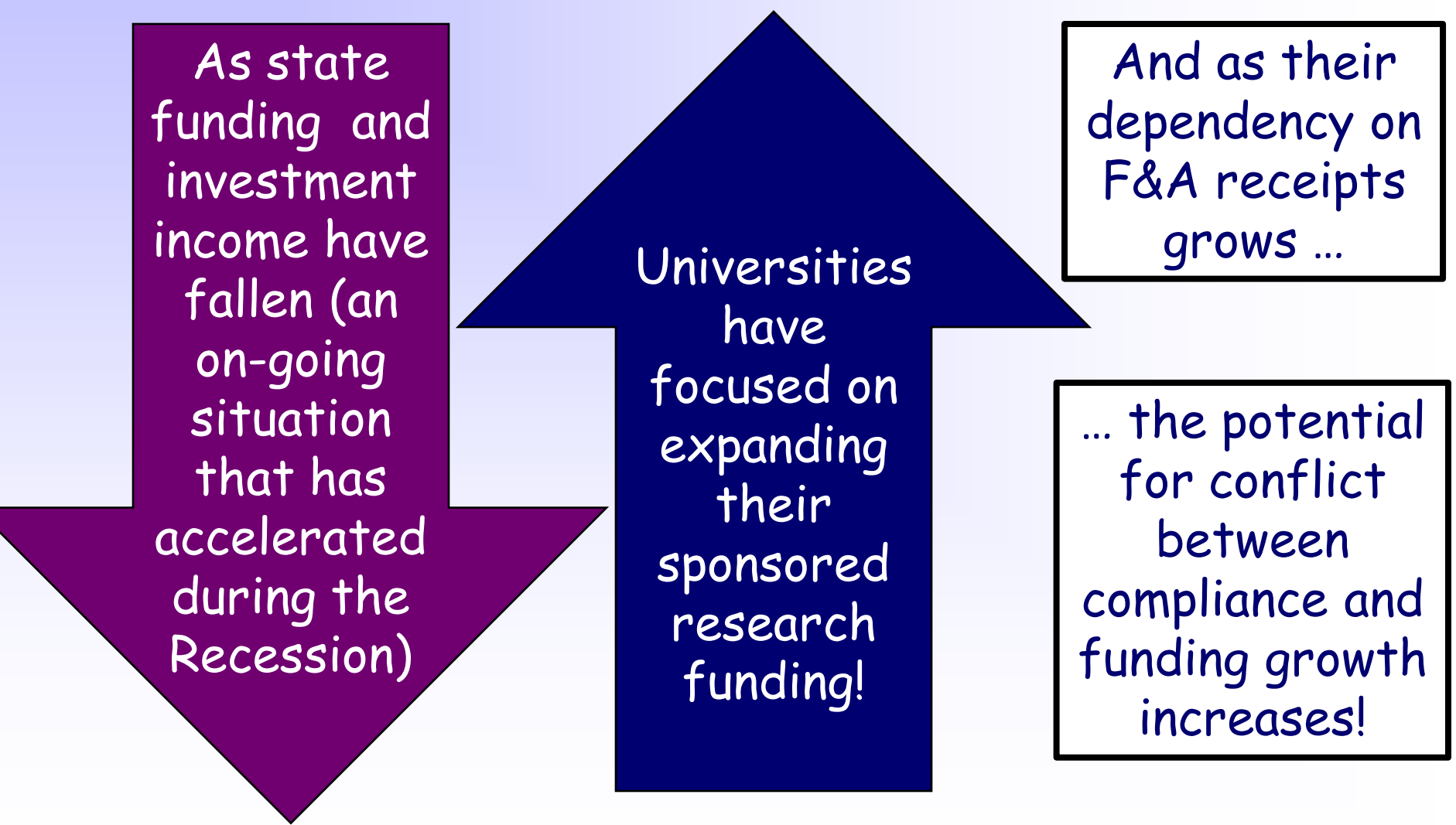
- As previously stated, sponsored research funding has become a major funding source for many universities, including UNC-Chapel Hill.

- Many jobs, including those of the SRO staff, are dependent upon the on-going receipt of F&A funds derived from sponsored research.

So universities have a vested interest in "growing" their sponsored research funding!

Tools universities use to attract research funding

Sponsored Research $$$$

- Grant Writing Assistance
- New Buildings & Labs
- Seed Grants
- Large Retention Packages
- Raiding "Stars" from other Universities
- Inter-disciplinary Programs

For many universities, it's just math!

As state funding and investment income have fallen (an on-going situation that has accelerated during the Recession)

Universities have focused on expanding their sponsored research funding!

And as their dependency on F&A receipts grows …

… the potential for conflict between compliance and funding growth increases!

Here's the "Rub"!

It's not an "either - or" situation. The reality for most universities is that they must do both:

- Pursue strategies for expanding their research budgets (self-interest) **and**
- Maintain strict compliance standards (stay out of trouble)

And they must do both well!

Balancing? Or Something Else?

<u>Note</u>: It's not just a matter of determining how to "balance" the two interests because balance suggests compromise. The challenge is much more difficult because to be successful, the modern university must excel at both!

The two areas of the university most impacted are its <u>organizational structure</u> and its <u>budget</u>!

Organization and Budget

- Where does each function reside within the university? Is it assigned to a high profile office (close to the Chancellor) or "buried" in the bureaucracy?

- What is the title for the head of each function? Are the titles comparable?

- How much money is allocated to each function?

- <u>Remember</u> – The best way to determine what an organization truly values is to look at its budget!

Three approaches for managing this "Dual Role"

1. Separate the functions and assign them to two different offices: <u>compliance</u> in one and faculty <u>assistance</u> in another.

2. Place both functions in the same office but assign them to different staff.

3. Place both functions in the same office and assign them to the same staff. Encourage a culture where compliance is viewed as just another aspect of faculty "assistance/help."

1. Separate the functions and assign them to **two different offices**: <u>compliance</u> in one and faculty <u>assistance</u> in another.

- This is the most commonly used model by universities.

- Primary responsibility for compliance is assigned to the SRO (although it is increasingly common for universities to also have a separate Office of Institutional Compliance). More on this later!

- Faculty assistance may be assigned to one or more office, e.g., Proposal Development Office, Vice Chancellor for Research and to departments/schools.

- <u>Advantage</u> – Clarity of roles for offices/staff.

- <u>Disadvantage</u> – "Good guys - bad guys" competition and difficulties coordinating the efforts of both.

2. Place both functions in the same office but assign them to different staff.

- Since individual staff are not asked to perform both compliance tasks and assistance tasks, this approach maintains clarity of roles for staff.

- Locating both functions in the same office under a the same supervisor suggests the university assigns equal importance to each.

- <u>Advantage</u> - One supervisor with duel responsibilities has a better opportunity to "coordinate" the two functions than two separate supervisors.

- <u>Disadvantage</u> – If strict compliance is perceived as a potential barrier to increasing funding, the supervisor may face difficult choices and potential conflicts!

3. Place both functions in the same office and assign them to the same staff. Encourage a culture where compliance is viewed as just another aspect of faculty "assistance/help."

- Staff are empowered to make sophisticated judgments requiring them to remain compliant while simultaneously enhancing PI competitiveness through the provision of appropriate training, problem-solving and support.

- Work loads (campus units/staff) must be kept as low as possible to allow this level of personalized service to PIs to be offered.

- This approach requires highly trained senior staff to be successful.

Two approaches to organizing SRO offices

"Organize Around the <u>Work</u>"

or

"Organize Around the <u>Clients</u>"

Organize SRO offices "Around the Work"

- **Pre-Award/Post-Award** – "Pre" includes proposal preparation/submission and "Post" includes management of awards from NOA through closeout. This is the most common organizational structure used by SROs.

- **Cradle-to-Grave** – A team of SRO staff handles all activity on an award from the initial proposal preparation through final award closeout. These teams may handle awards by PI, department or funding agency. This structure is "catching on" and is being used more frequently by SROs.

Organize SRO offices "Pre-award/Post-award"

- Advantages – This organizational structure is preferable for SROs populated with many lower classified positions and it allows for staff specialization - by doing fewer things staff become experts in the things they do.

- Disadvantages – Transactions are processed along an "assembly line" with multiple "hand-offs" which potentially create:
  - Confusion and/or error at each handoff.
  - No "ownership for the whole" – the entire project!

Organize SRO offices "Cradle-to-Grave"

- <u>Advantages</u>
  - SRO staff are responsible for "the whole" (full integration of all aspects of award management).
  - Fewer hand-offs minimize the chance for error.
  - Greater potential for developing close working relationships between SRO staff and PIs/Depts.
  - As SRO staff are accepted as an integral "part of the team", their morale goes up.
- <u>Disadvantages</u> – The need for many highly classified (costly) staff.

Organization of SRO offices

"Organize Around the Clients"

Who are the Clients?

Funding Agencies
or
Campus Departments/PIs

Organize SRO offices "Around the Clients"

- <u>By Funding Agency</u> – This approach allows SRO staff to become experts in the rules of a particular agency (NSF, NIH). They may also develop close working relationships with agency staff.

- <u>By Campus Unit</u> – This approach requires SRO staff to become familiar with the rules/policies of multiple agencies. By working closely with specific departments and faculty on many issues, they are able to develop close working relationships with the departments they serve.

Organization of SRO offices

Special Combinations

- Organize SRO using the traditional pre-award/post-award structure, but then create teams within each unit to support specific campus departments.

- Organize SRO into teams assigned to support specific campus departments, but with specialists housed within or at least available to each team.

- Assign industry-funded awards (more complicated "one-off" negotiations with complex intellectual property issues), international projects (complex currency and legal issues) and/or federal contracts (FAR) to specialists or specialist teams.

UNC-CH Case Study: Background

- Primary responsibility for both <u>compliance</u> and <u>operations</u> was assigned to the SRO, i.e., the Office of Sponsored Research (OSR), headed by an Associate Vice-Chancellor reporting to the Vice Chancellor for Research (VCR).

- OSR used the traditional Pre-Award/Post-Award organization structure with strong managers over each of the two units. A long-standing rivalry existed between the two units, in part due to the Pre-Award unit having higher classified positions (Contract Specialists) often filled by Master's level staff and the Post-Award unit having lower classified clerical positions often filled by high school graduates.

UNC-CH Case Study: Background

- A separate Office of Proposal Development (OPD) with primary responsibility for assisting PIs prepare major multi-disciplinary proposals also reported to the VCR.

- Other proposal development services for faculty were decentralized with uneven access throughout campus, e.g., the Medical School could afford to hire staff to provide assistance while many departments within the College of Arts and Sciences could not.

- OSR had a faculty assistance role as well, but operational responsibilities, work volume, and the lack of clearly defined duties minimized the amount of assistance that was provided.

UNC-CH Case Study: Background

- OSR (along with many of the other "business units" at UNC) was chronically understaffed when compared with peer institutions.

- OSR was located off-campus (first on West Franklin Street and later at the Administrative Office Building on MLK Boulevard). This physical separation contributed to the perception of an office "disconnected" from campus.

- Emphasis at OSR was on <u>operations</u> (transaction processing). The office was headed by a professional Research Administrator, but otherwise there were few high level research administrators available to assist campus units with complex issues.

UNC-CH Case Study: Background

- The level of sponsored research funding at UNC expanded rapidly during the period from 1990 through 2005 with little consideration by UNC management for building appropriate staff capacity within the OSR.

- By 2005, the strain on the system was obvious and because faculty complaints were so pervasive, the task of "fixing OSR" became a hot topic among senior management in South Building.

UNC-CH Case Study: Background

- <u>View from within OSR</u> – "We are working as hard as possible and can never keep up with the demand. We need to hire more people. And by the way, everybody hates us!"

- <u>View from Campus</u> – Good faculty are leaving UNC because of the poor quality of support provided by OSR. It takes far too long to get answers to simple questions, phone calls aren't being returned and simple transactions (getting an account number for a new award) take far too long. Evidence of complaints from funding agencies was also growing.

Both views were correct!

UNC-CH Case Study
Crisis point reached in 2006!

The Vice Chancellor for Research appointed a campus committee to review OSR – and I chaired it!

- ✓ Broad mandate for reviewing operations and making recommendations for improvement.
- ✓ 15 members - 11 from campus, 4 from OSR.
- ✓ Met weekly for 14 months.
- ✓ Sought input through public hearings, group meetings, interviews with key faculty.
- ✓ Interim recommendations and final report.
- ✓ **Ground Rule:** Discussion of individual staff performance was off limits!

Guiding Principle!

"UNC-Chapel Hill's world class faculty research enterprise deserves and requires a world class administrative support system!"

Statement of Problem
(Initial Findings)

- Excessive processing delays - account numbers, budget modifications, project extensions.

- Inadequate communication between OSR and campus – problems with both high level communication (policy guidance) and routine communication (just getting calls returned).

- Inadequate communication between OSR units, especially between pre-award and post-award.

- Inconsistent policy interpretation within OSR staff.

Six sequential topics for review

- Organizational structure

- Use of automation

- Policy, procedures, workflow, priorities and duplication of effort

- Delegating responsibility/authority to campus sub-units

- Staff skills/experience/education levels

- Number of staff

Research Dollars v. Staffing
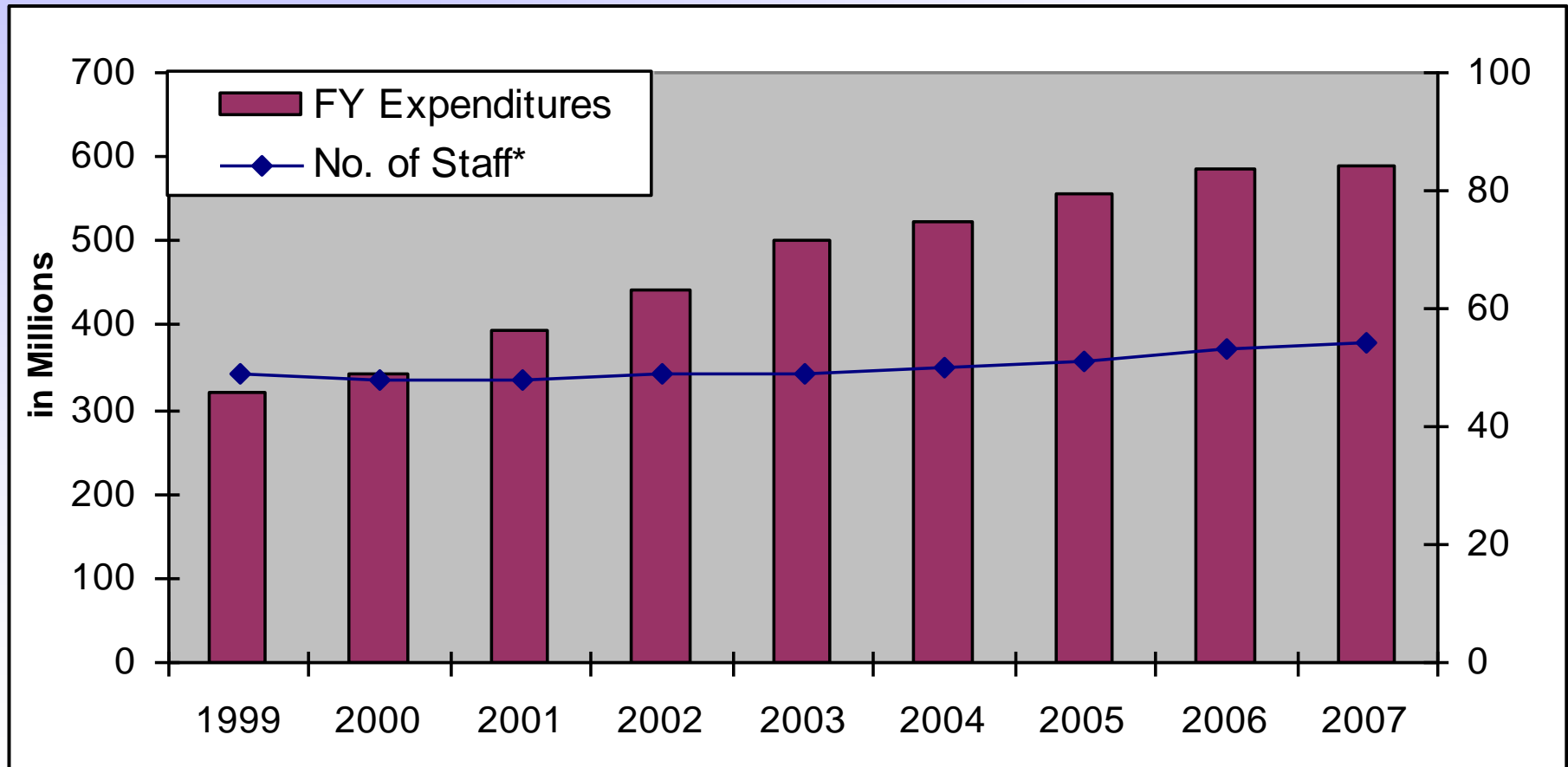
No "Silver Bullet" Solution!

- Problems existed in all areas!
- Each of the six topics required careful study.
- Topics were not discrete and many were inter-related.
- <u>Approach</u>: Analyze each topic sequentially beginning with organizational structure.
- <u>Assumption</u>: It took many years to create this "mess", we won't fix it overnight!

Pre-Award/Post-Award Organizational Structure

Associate VC and Director

Director Pre Award Services

Processing Assistant

- Contract Specialist
  - Proposal Specialist
  - Asst. Contract Specialist
- Contract Specialist
  - Asst. Contract Specialist
  - Asst. Contract Specialist
    - Asst. Contract Specialist
    - Asst. Contract Specialist
- Senior Contract Specialist
  - Proposal Specialist
- Contract Specialist
  - Asst. Contract Specialist
- Contract Specialist
- Contract Specialist
  - Asst. Contract Specialist

Last updated: 5/16/2008

Director, Post Award Services

Processing Assistant

Data Management
Data Management
Data Management
Data Management

Cash Management Accountant

Director, Financial Operations

- Financial Analyst
  - Financial Reporting
  - Financial Reporting
  - Financial Reporting
  - Pre Audit
  - Financial Reporting
  - Pre Audit
- Financial Analyst
  - Financial Reporting
  - Pre Audit
  - Financial Reporting
  - Pre Audit
  - Financial Reporting
  - Pre Audit
  - Pre Audit
  - Financial Reporting
- Financial Analyst
  - Financial Reporting
  - Financial Reporting
  - Pre Audit
  - Financial Reporting
  - Pre Audit

Pre-Award/Post-Award Organizational Structure

Campus

Associate VC and Director

Sponsor 1 ● ● ● **Sponsor N**

Director
Pre Award Services

Processing Assistant

Director Post Award Services

Processing Assistant

Data Management

Data Management

Cash Management
Accountant

Data Management

Director, Financial Operations

Data Management

| Contract Specialist | Contract Specialist | Senior Contract Specialist | Contract Specialist | Contract Specialist | Contract Specialist |

Proposal Specialist

Asst. Contract Specialist

Asst. Contract Specialist

Asst. Contract Specialist

Asst. Contract Specialist

Asst. Contract Specialist

Asst. Contract Specialist

Proposal Specialist

Financial Analyst

Financial Analyst

Financial Analyst

Financial Reporting

Financial Reporting

Financial Reporting

Financial Reporting

Pre Audit

Financial Reporting

Financial Reporting

Financial Reporting

Pre Audit

Pre Audit

Pre Audit

Financial Reporting

Pre Audit

Financial Reporting

Financial Reporting

Pre Audit

Pre Audit

Pre Audit

Financial Reporting

Proposal processing

Pre-Award/Post-Award Organizational Structure

Campus

Associate VC and Director

Sponsor 1 ● ● ● **Sponsor N**

Questions

STOP

Director
Pre Award Services

Processing Assistant

Contract Specialist

Contract Specialist

Senior Contract Specialist

Contract Specialist

Contract Specialist

Contract Specialist

Proposal Specialist

Asst. Contract Specialist

Asst. Contract Specialist

Asst. Contract Specialist

Asst. Contract Specialist

Asst. Contract Specialist

Asst. Contract Specialist

Asst. Contract Specialist

Proposal Specialist

Director, Post Award Services

Processing Assistant

Management Accountant

Director, Financial Operations

Data Management

Data Management

Data Management

Data Management

• Review - Negotiate
• Sign
• Prepare Summary

Financial Analyst

Financial Reporting

Financial Reporting

Financial Reporting

Pre Audit

Financial Reporting

Pre Audit

Financial Analyst

Financial Reporting

Pre Audit

Financial Reporting

Pre Audit

Financial Reporting

Pre Audit

Pre Audit

Financial Reporting

Financial Analyst

Financial Reporting

Financial Reporting

Pre Audit

Financial Reporting

Pre Audit

Incoming Awards to Account Establishment

Pre-Award/Post-Award Organizational Structure

Campus

Associate VC and Director

Sponsor 1 ● ● ● **Sponsor N**

Questions

Director
Pre Award Services

Director, Post Award Services

Processing Assistant

Processing Assistant

Data Management

Data Management

Management Accountant

Data Management

Data Management

Contract Specialist

Contract Specialist

Senior Contract Specialist

Contract Specialist

Contract Specialist

Contract Specialist

Director, Financial Operations

Proposal Specialist

Asst. Contract Specialist

Asst. Contract Specialist

Asst. Contract Specialist

Asst. Contract Specialist

Asst. Contract Specialist

Asst. Contract Specialist

Asst. Contract Specialist

Proposal Specialist

STOP

Number Budget

• Review - Negotiate
• Sign
• Prepare Summary

Financial Analyst

Financial Reporting

Financial Reporting

Pre Audit

Financial Reporting

Pre Audit

Financial Reporting

Pre Audit

Financial Analyst

Financial Reporting

Pre Audit

Pre Audit

Financial Reporting

Pre Audit

Financial Reporting

Pre Audit

Financial Reporting

Financial Analyst

Financial Reporting

Financial Reporting

Pre Audit

Financial Reporting

Financial Reporting

Pre Audit

Proposals have due dates so they always trump award setup!

Recommended New Organization Chart

Associate VC & Director

Proposal Management Director

Award Management Director

Reporting & Cash Management Director

Cash Management Specialist

Proposal Specialist 1 ··· Proposal Specialist N

Award Manager 1 ··· Award Manager N

Reporting Unit Manager ··· Reporting Unit Manager

(Sponsor Specific)

(Campus Specific)

(Sponsor Specific)

- Major Project Pre-Proposal Assistance
- Proposal Review
- Agency Communications until proposal is accepted
- Bi-Lateral Award Negotiation/Signature

- Post-Proposal Agency Communications
- Letter of Guarantee
- Account Establishment
- Award Maintenance
- Subcontracts/Sub-accounts
- Pre-Audit

- Reporting/Invoicing
- Accounts Receivable
- Closeout

Topic 1 – Organizational Structure
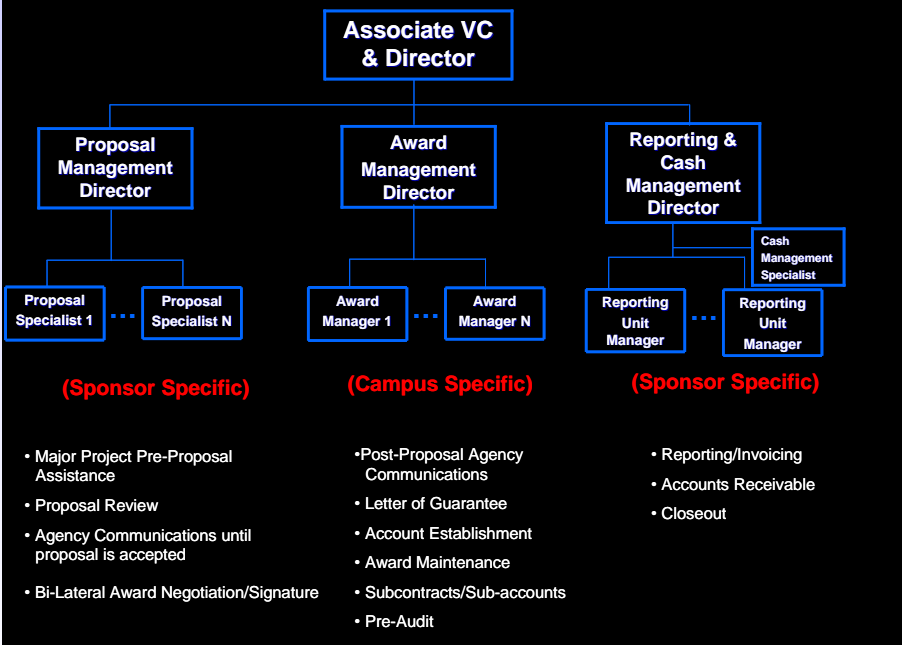
New Organization Chart

```
                    Associate VC
                     & Director
        ┌────────────────┼────────────────┐
   Proposal          Award          Reporting &
  Management       Management           Cash
   Director         Director         Management
                                      Director
                                              Cash
                                           Management
                                            Specialist
    ┌────┐          ┌────┐          ┌────┐
Proposal  Proposal  Award   Award  Reporting  Reporting
Specialist 1 Specialist N Manager 1 Manager N Unit      Unit
                                     Manager   Manager
  (Sponsor Specific)  (Campus Specific)   (Sponsor Specific)
```

(Sponsor Specific)

(Campus Specific)

(Sponsor Specific)

- Major Project Pre-Proposal Assistance
- Proposal Review
- Agency Communications until proposal is accepted
- Bi-Lateral Award Negotiation/Signature

- Post-Proposal Agency Communications
- Letter of Guarantee
- Account Establishment
- Award Maintenance
- Subcontracts/Sub-accounts
- Pre-Audit

- Reporting/Invoicing
- Accounts Receivable
- Closeout

- Responsibility for proposals and awards is assigned to different staff/teams, thus eliminating conflicting priorities.

- A proposal is transferred from Proposal Management to Award Management when it is "accepted by the sponsor as complete."

- Inefficiencies and errors are minimized by replacing "assembly line" with "single touch" system.

OHIO – Only Handle It Once!

Topic 1 – Organizational Structure
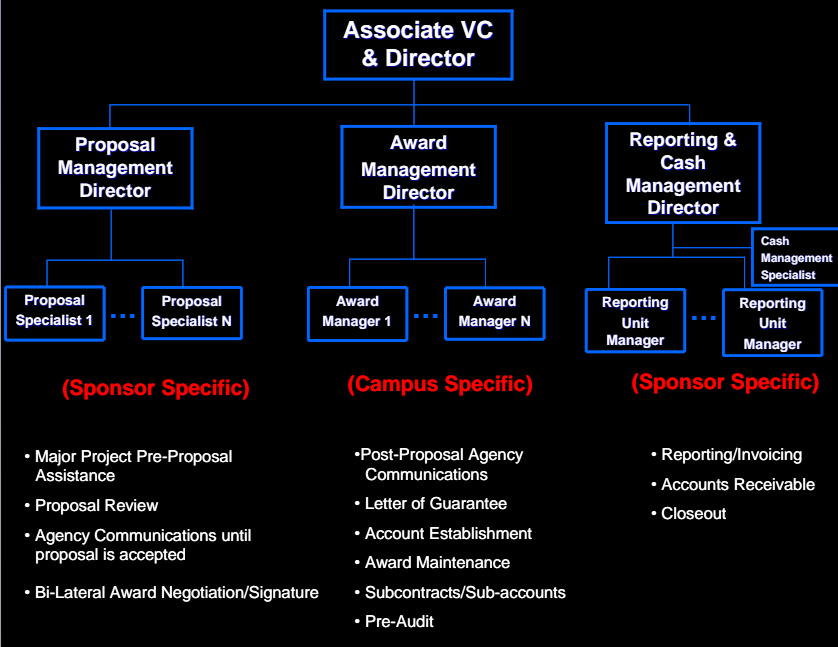
New Organization Chart

```
              Associate VC
               & Director
     ┌──────────────┼──────────────┐
 Proposal        Award      Reporting &
Management     Management       Cash
 Director       Director     Management
                              Director
                                    Cash
                                 Management
                                  Specialist
  ┌──┐         ┌──┐         ┌──┐
Proposal  Proposal   Award    Award   Reporting  Reporting
Specialist 1 Specialist N Manager 1 Manager N   Unit      Unit
                                              Manager    Manager
```

(Sponsor Specific)   **(Campus Specific)**   **(Sponsor Specific)**

- Major Project Pre-Proposal Assistance
- Proposal Review
- Agency Communications until proposal is accepted
- Bi-Lateral Award Negotiation/Signature

- Post-Proposal Agency Communications
- Letter of Guarantee
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- Award Maintenance
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- Reporting/Invoicing
- Accounts Receivable
- Closeout

- Responsibility for proposals and awards is assigned to different staff/teams, thus eliminating conflicting priorities.

- A proposal is transferred from Proposal Management to Award Management when it is "accepted by the sponsor as complete."

- Inefficiencies and errors are minimized by replacing "assembly line" with "single touch" system.

Organizing the Award Management Unit around Campus Units improved Customer Service!

Topic 2 – Use of Automation

❑ RAMSeS – Proposal Administration System

- Transparency - Share as much detail as possible with campus, e.g., proposal status. Also grant salary access data to departmental proposal developers on a need-to-know-basis.

- Increase functionality, e.g., add a subcontract module that allows campus units to enter key information such as budget, Scope of Work.

❑ Electronic Sponsor Invoicing System

- The existing manual process was labor-intensive and did not take advantage of "repeat monthly data entries."

- Implement an automated review system.

Topic 3 – Policy, Procedures, Workflow, Priorities & Effort Duplication

❑ <u>Eliminate duplicate review</u> of transactions by multiple central offices, e.g., if travel forms are approved by the travel accounting office, OSR should accept without further review. If the quality of review is a problem, the two Directors should resolve through training or other action.

❑ <u>Simplify budget set-up</u> by requiring only what the agency requires. If the agency doesn't require a detailed budget, adopt the practice of loading all dollars in the revenue line and allow "budgets" to be created as expenditures occur.

Topic 3 – Policy, Procedures, Workflow, Priorities & Effort Duplication

❏ <u>Streamline contracting/subcontracting</u> by pre-negotiating terms and conditions with "repeat customers."

❏ Enable the use of <u>electronic signatures</u> whenever possible, e.g., effort reporting and final closeout documents (invention report).

❏ Publish, distribute and maintain a <u>current policy manual</u> with clearly defined responsibilities for each level of the organization.

Topic 4 – Delegate Authority to Campus Units for Selected OSR Tasks!

Not all departments will be able to (or will want to) assume additional responsibility, but UNC's policy should be to encourage building department-level capacity wherever possible.

- ✓ Paradigm Switch – Use training as a strategic tool for developing and verifying individual capability on campus to "do work" previously reserved for OSR staff!
- ✓ This new view of research administrator certification:

Training-testing-mentoring-delegation-monitoring!

Topic 4 – Delegate Authority to Campus Units for Selected OSR Tasks!

Not all departments will be able to (or will want to) assume additional responsibility, but UNC's policy should be to encourage building department-level capacity wherever possible.

- ✓ Implement formal delegation agreements between OSR and the department/school/center with clearly defined duties, responsibilities and renewal dates!

- ✓ The goal in a tight budget environment should be to:

Add qualified "staff cycles" without increasing OSR budget by delegating work to qualified department staff!

Topic 5 – Staff Skills/Education

❑ <u>Observation</u>: The current distribution of staff positions was unbalanced with too many clerks and too few senior "problem solvers."

❑ Average staff salary - UNC was $15K below peer institutions.

❑ Dual strategy for transition:

- Ongoing training/enrichment for existing staff.
- As attrition occurs, rewrite job descriptions elevating education/experience requirements, so position classifications (and salary) for new staff better match OSR and campus requirements.

Topic 6 – Number of Staff

❑ <u>Observation</u>: OSR had nine too few positions when compared with UNC's peer institutions (based on the number of positions per $100 million of research funding).

❑ <u>Targeted additions</u>
- Add positions in accounting and award negotiation (find applicants with industry sponsored and/or international project experience).
- Create a Deputy Director for Operations position.
- Increase funding to build a more robust information technology capability.

❑ Phase-in additional positions over two years.

COMP 918: Research Administration for Scientists

Introduction to Project Management and Tools for Planning!

Tim Quigg, Lecturer and Associate Chair for Administration, Finance and Entrepreneurship
Computer Science Department, UNC-Chapel Hill

Research Administration for Scientists

Projects and Operations

- ✓ A **Project** is a temporary endeavor with a defined beginning and end, undertaken to meet unique goals and objectives. The temporary nature of projects stands in contrast with…

- ✓ **Operations** (business as usual) which are repetitive, permanent, or semi-permanent functional activities to produce products or services.

- ✓ Think of individual grants as projects and the running of your lab or department as operations!

Projects and Operations

✓ Because projects are focused activities with clear objectives and deadlines, the pace of activity is often high.

✓ Operations are more routine and while deadlines apply, many things can wait till tomorrow.

✓ Projects often require "special" resources, e.g., people with special skills (post doc, consultant, colleague from another field) for short periods.

✓ Operations require people with a long term commitment to the organization and its mission!

Here's the Challenge!

✓ Most of us are (or will at times be) responsible for both operations and special projects!

✓ We may even supervise people and resources that are involved in both!

✓ The skills required to effectively manage operations and projects are quite different.

Today we'll concentrate on the management skills and strategy required for managing projects!

Project Management

Project management is the discipline of planning, organizing, securing, and managing resources to achieve defined goals within a given time frame.

Three basic components of any project

Time – Budget – Scope

Project Quality
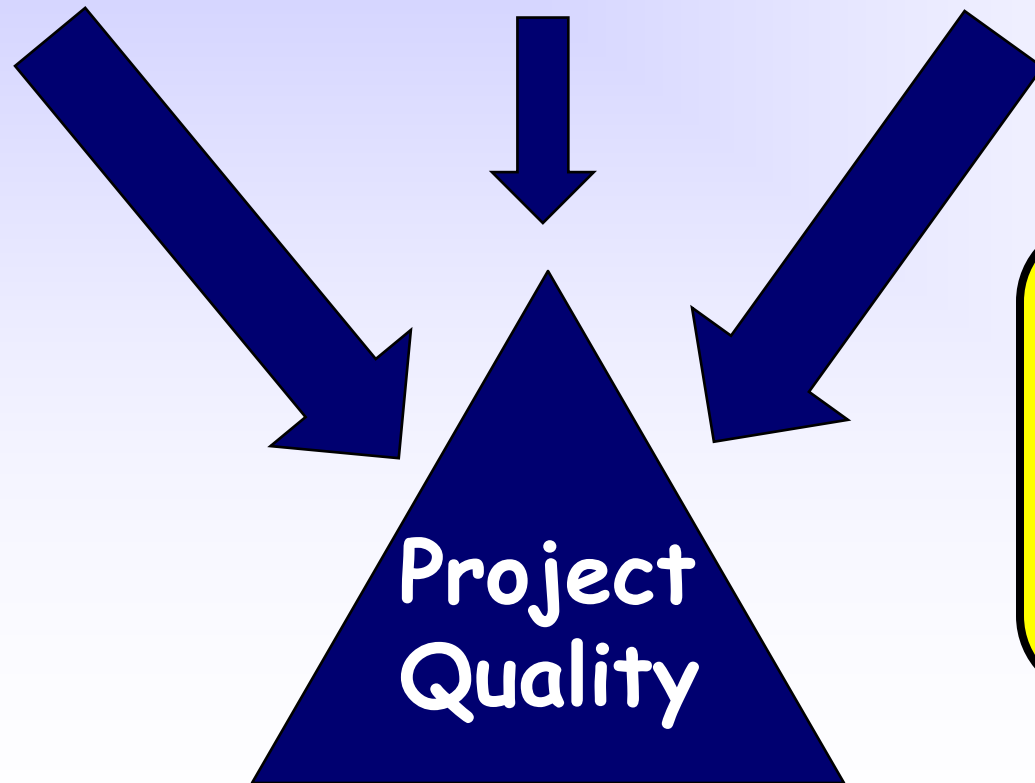
And all three are inter-related. Changes in one will always impact the other two!

Changes in time – project duration

If the required completion date is "moved-up" (time is reduced), what might be the impact on scope and budget?

- <u>Scope</u>: May need to be reduced – less time means doing less work unless…

- <u>Budget</u>: If scope can't be reduced, then budget may need to be increased - more resources committed to meet the abbreviated schedule.

> But that doesn't always work! Sometimes "adding manpower to a late project only makes it later."

Mythical Man Month
Fred Brooks

Four important concepts in project management

- ✓ Project Life Cycle

- ✓ Control Concepts

- ✓ Critical Path

- ✓ Float Time

Four phases of the project management life cycle

- **Definition/Initiation**
- **Planning**
- **Execution/Control**
- **Closure**

These phases occur in a cycle, they are not discrete linear activities!

Phase 1 - Definition/Initiation

- Develop a Business Case
- Undertake a Feasibility Study
- Define Project Parameters
- Appoint the <u>Project Manager</u>
- Perform a <u>Phase Review</u> as part of the overall Project Review. This will feed into the institution's Project Management System.

So that future projects will benefit from all past experiences!

Phase 2 - Planning Phase

Includes many important tasks, but the most important are:

- the assembly of the <u>Project Team</u>.

- the development of a detailed <u>Project Management Plan</u>!

What should a project management plan include?

Project Management Plan

A project management plan should always cover the entire project end-to-end, from initiation through planning, execution and closure.

The suggested level of complexity depends upon the size and context of the project, but all management plans should include the following elements!

<u>Overview</u>: Purpose and primary objectives of the project.

Project Management Plan

A project management plan should always cover the entire project end-to-end, from initiation through planning, execution and closure.

Scope: Project needs, resource requirements, deliverables, constraints and breakdown of work structure.

Schedule: Detailed list of project activities and key milestones.

Costs: Project budget, funding sources and spending limits/constraints.

Project Management Plan

A project management plan should always cover the entire project end-to-end, from initiation through planning, execution and closure.

Quality: Metrics to determine success and system for tracking quality control.

Project Team: People working on project, their roles and responsibilities.

Communication and Decision-Making: Type, channels, levels of authority.

Project Management Plan

A project management plan should always cover the entire project end-to-end, from initiation through planning, execution and closure.

Risks: System to identify/evaluate risk and contingency planning.

Closure: Delivery and acceptance of deliverables, disassembling project team, disposition of resources.

Changes: Procedures for approving changes (authority) and for tracking cost, quality and other key components.

Phase 2 - Planning

Once all project activities are defined, large activities must be divided into smaller components (tasks) and the following must be determined:

- How are the tasks inter-related?

- Sequence of the tasks?

- Duration and "<u>float</u>" for each tasks?

- Resource requirements to complete each task?

- Authority/responsibility for each task?

Useful Planning Tools

- ## Fishbone Diagrams
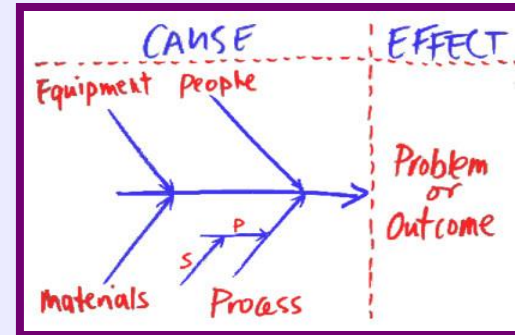
- ## Gantt Charts
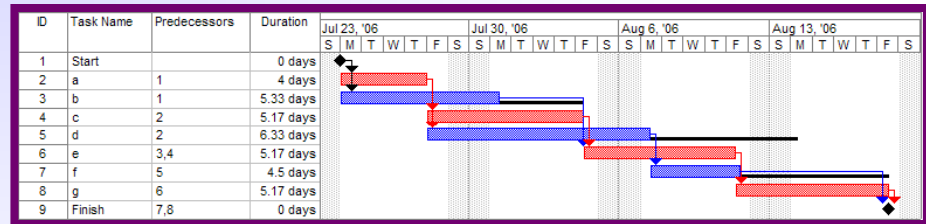
- ## Critical Path Flow Diagrams
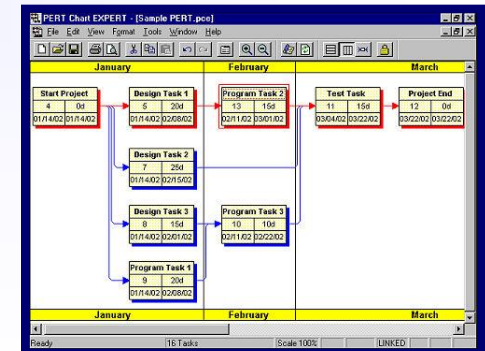
Fishbone Diagrams

A fishbone diagram has a central spine running from left to right, around which is built a map of factors which contribute to the final result or outcome. For each project the main categories of factors are identified and shown as the main "bones" leading to the spine.
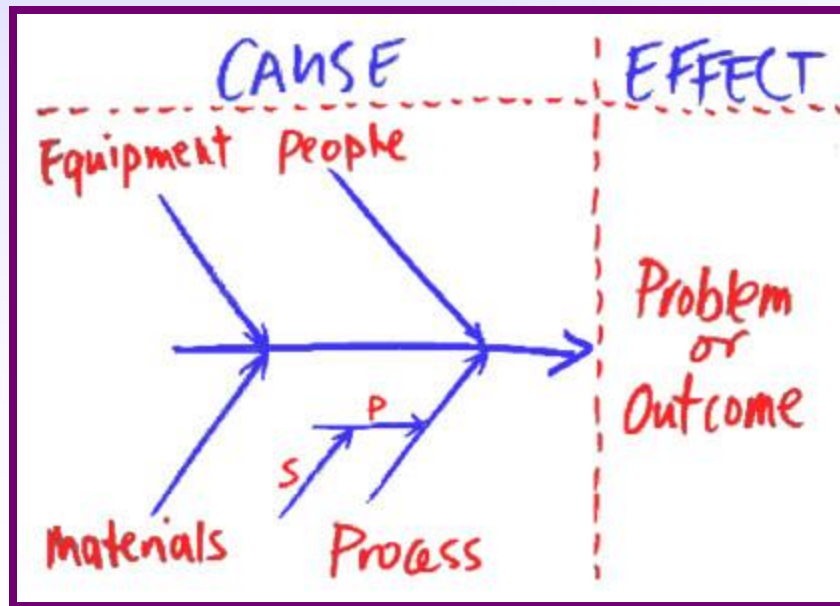
Fishbone Diagrams

Into each category can be drawn <u>primary</u> elements or factors (shown as P in the diagram), and into these can be drawn <u>secondary</u> elements or factors (shown as S in the diagram). This is done for every category, and can be extended to third or fourth level factors if necessary.
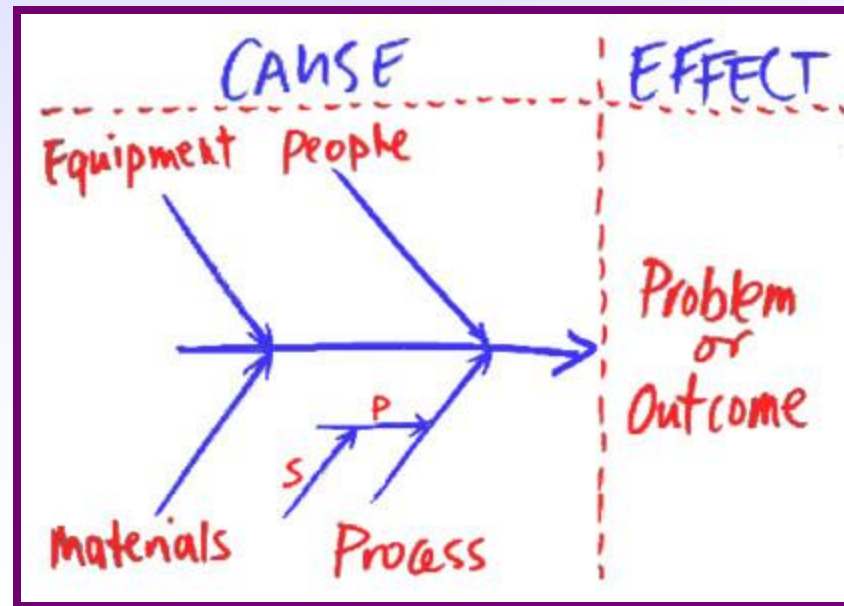
Fishbone Diagrams

Fishbone diagrams are particularly useful in early project planning, notably when gathering and organizing factors that are required to complete a project and can be useful tools in identifying hidden factors. They are often the tangible result of "brainstorming sessions."
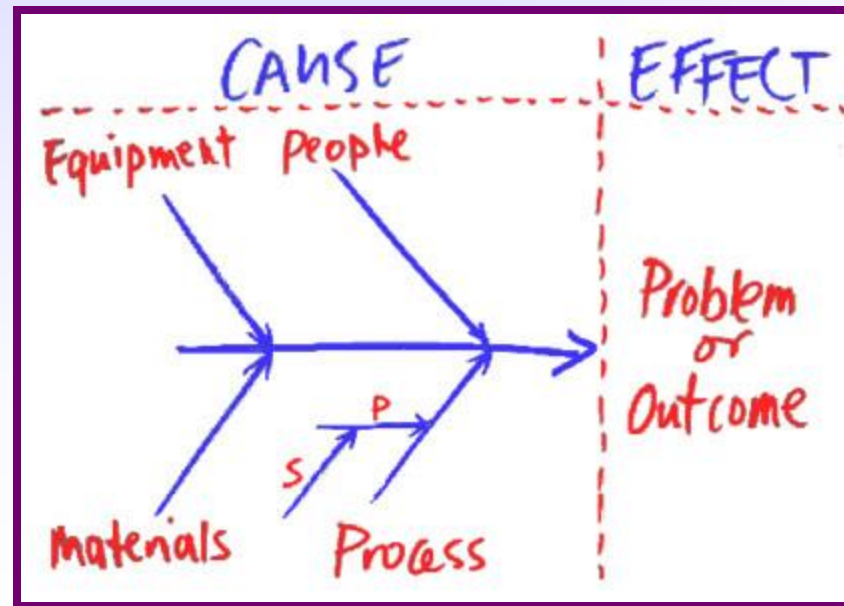
Fishbone Diagrams

At a simple level, the fishbone diagram is a very effective planning and modeling tool - especially for <u>mapping</u> an entire operation. It can help identify the requirements of a project, but these diagrams aren't detailed enough to help with scheduling issues.
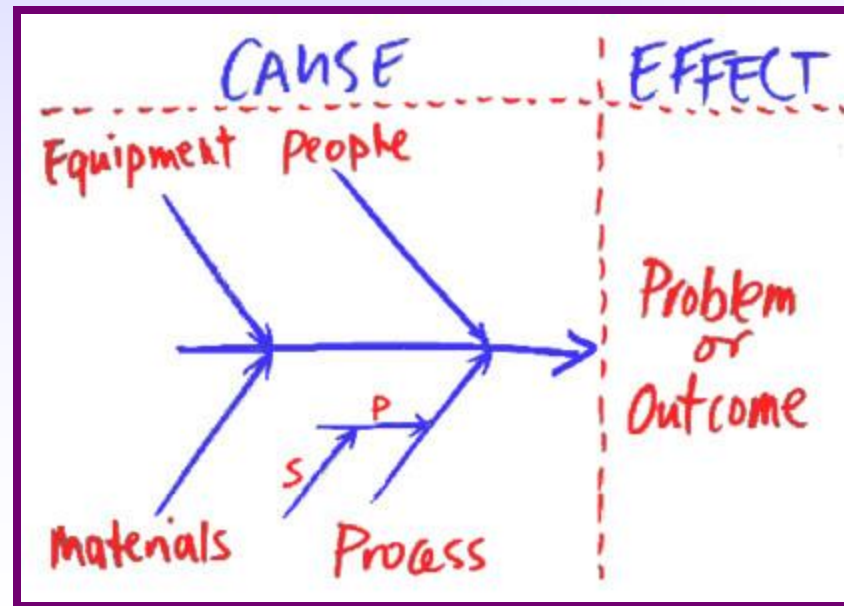
Gantt Charts

Gantt charts are a type of bar chart used to illustrate a project's schedule. They display the start and finish dates of the terminal elements and summary elements which comprise the work breakdown structure of a project. They are excellent tools for tracking/reporting/presenting both project plans and project progress easily and quickly.

ID	Task Name	Predecessors	Duration
1	Start		0 days
2	a	1	4 days
3	b	1	5.33 days
4	c	2	5.17 days
5	d	2	6.33 days
6	e	3,4	5.17 days
7	f	5	4.5 days
8	g	6	5.17 days
9	Finish	7,8	0 days
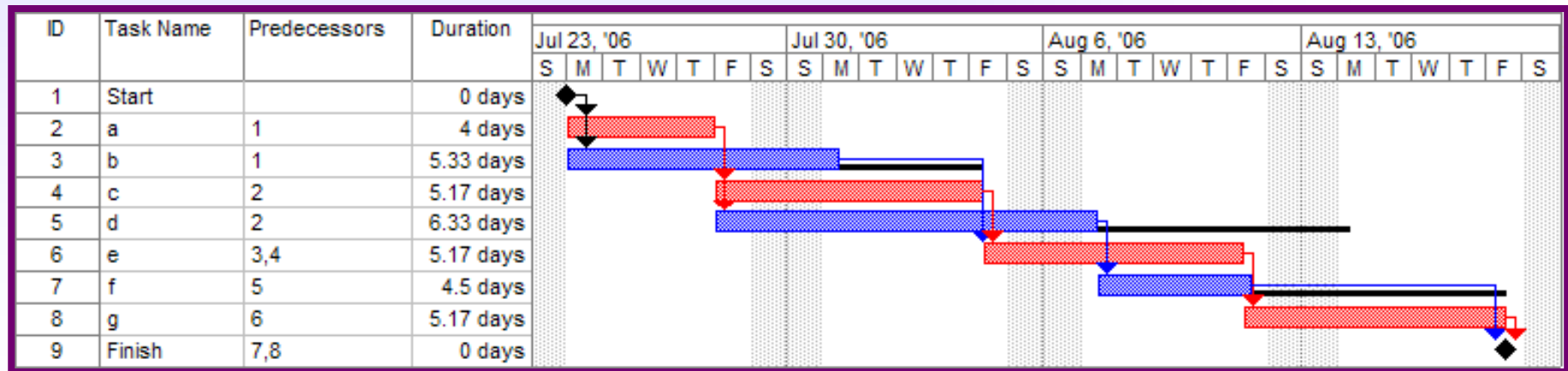
Gantt Charts

The time-line for the duration of the project and every activity has a separate line. You can color code the time blocks to denote the type of activity, e.g., intense, watch casually, directly managed, delegated and left-to-run on its own. You can schedule review and insert break points as needed. At the end of each line you can show as many cost columns for the activities as you need.

ID	Task Name	Predecessors	Duration
1	Start		0 days
2	a	1	4 days
3	b	1	5.33 days
4	c	2	5.17 days
5	d	2	6.33 days
6	e	3,4	5.17 days
7	f	5	4.5 days
8	g	6	5.17 days
9	Finish	7,8	0 days
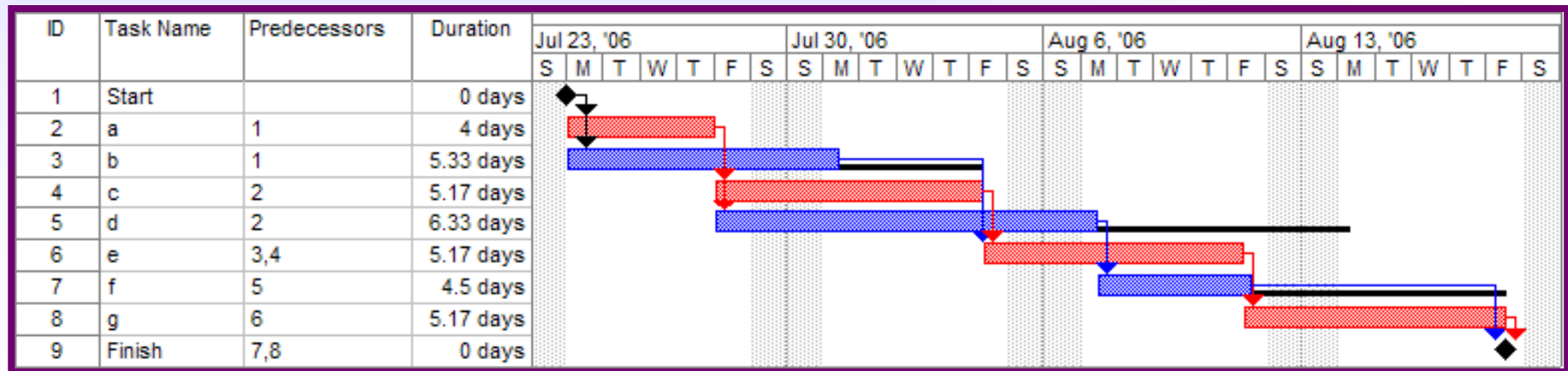
Gantt Charts

Gantt Charts are probably the most flexible and useful of all project management tools, but they do not easily or obviously show the importance and inter-dependence of related parallel activities. And they don't show the necessity to complete one task before another can begin, as a Critical Path Analysis will do.
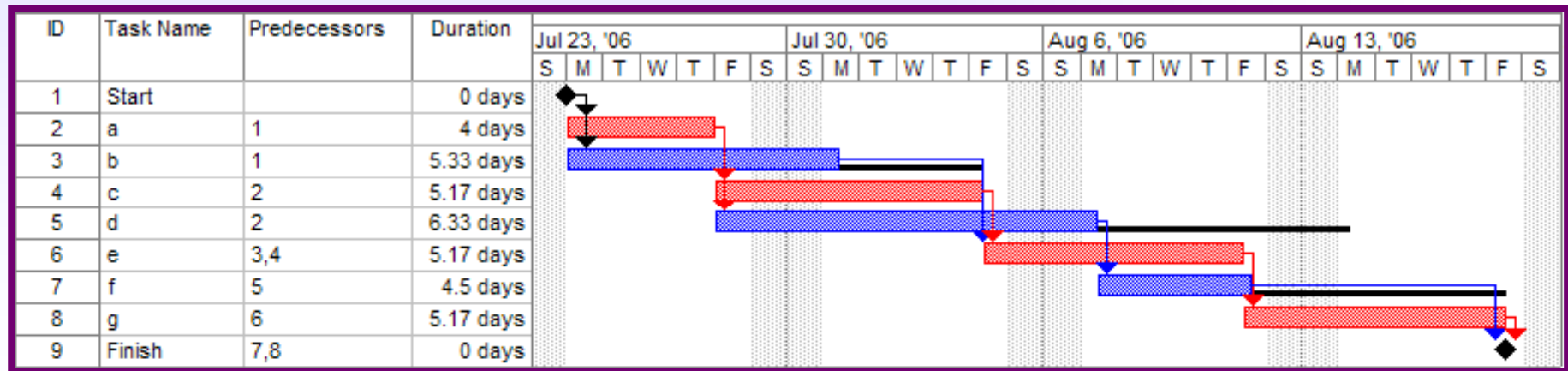
ID	Task Name	Predecessors	Duration
1	Start		0 days
2	a	1	4 days
3	b	1	5.33 days
4	c	2	5.17 days
5	d	2	6.33 days
6	e	3,4	5.17 days
7	f	5	4.5 days
8	g	6	5.17 days
9	Finish	7,8	0 days

Critical Path Analysis

Critical Path Analysis flow diagrams are very good for showing interdependent factors whose timings overlap or coincide. They also enable a plan to be scheduled according to a timescale.

Note: Some tasks run concurrently, some must be completed before others can begin and some have extra "float time."
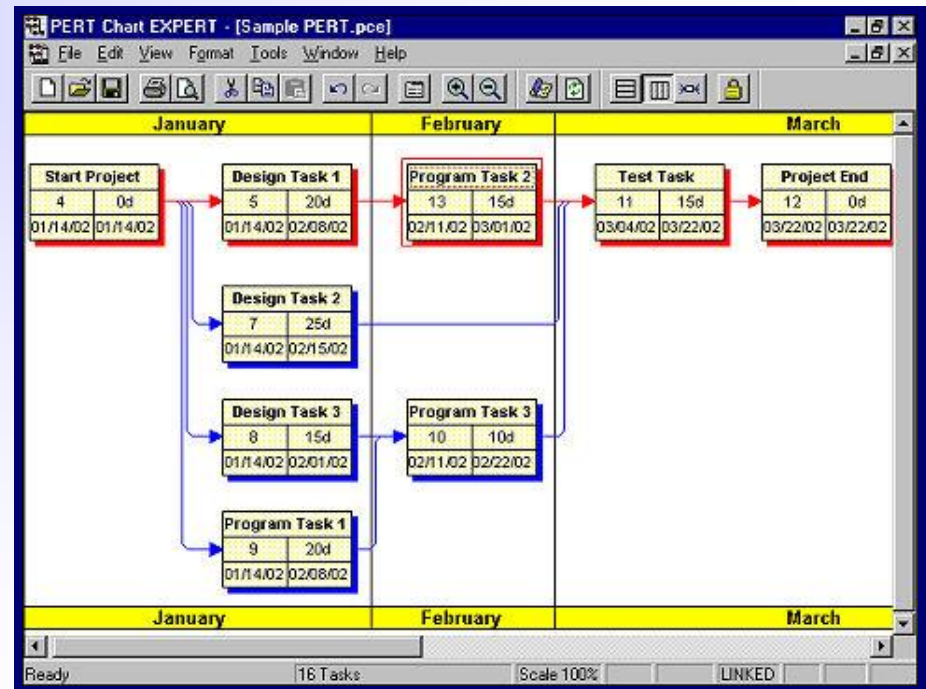
Critical Path Analysis

Critical Path Analysis flow diagrams are very good for showing interdependent factors whose timings overlap or coincide. They also enable a plan to be scheduled according to a timescale.

Design Tasks 2 and 3 each require the same amount of time to complete, but 3 must be completed in one month, while 2 has two months available – it has one month of "float time."
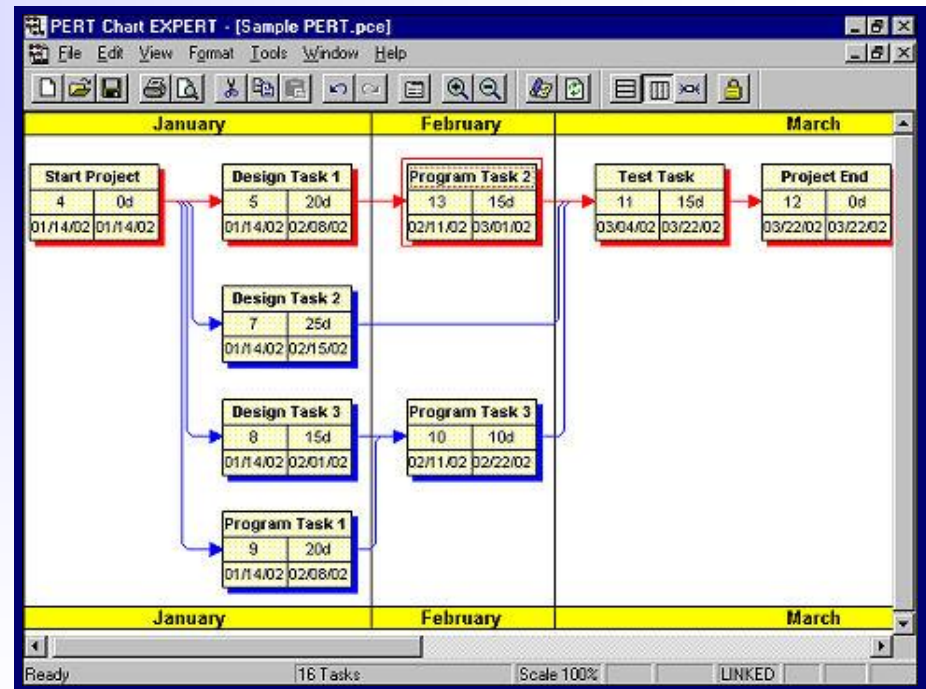
Critical Path Analysis – PERT

PERT (Program Evaluation and Review Technique) is a specialized method for identifying related and interdependent activities and events, especially in large projects that may contain hundreds or thousands of connected elements.

PERT is not normally used in simple projects, but for projects of considerable size and complexity (particularly when timing and interdependency issues are crucial), a Project can benefit from the detailed analysis enabled by PERT.

PERT/CPM Chart - PC Card

1	Start project	5	Breadboard running	9	Manual finalized
2	All specs finalized	6	Hardware fully functional	10	Manual ready for printer
3	Hardware design completed	7	PC Board released	11	Project complete
4	Manual layout completed	8	Software finished		Critical path
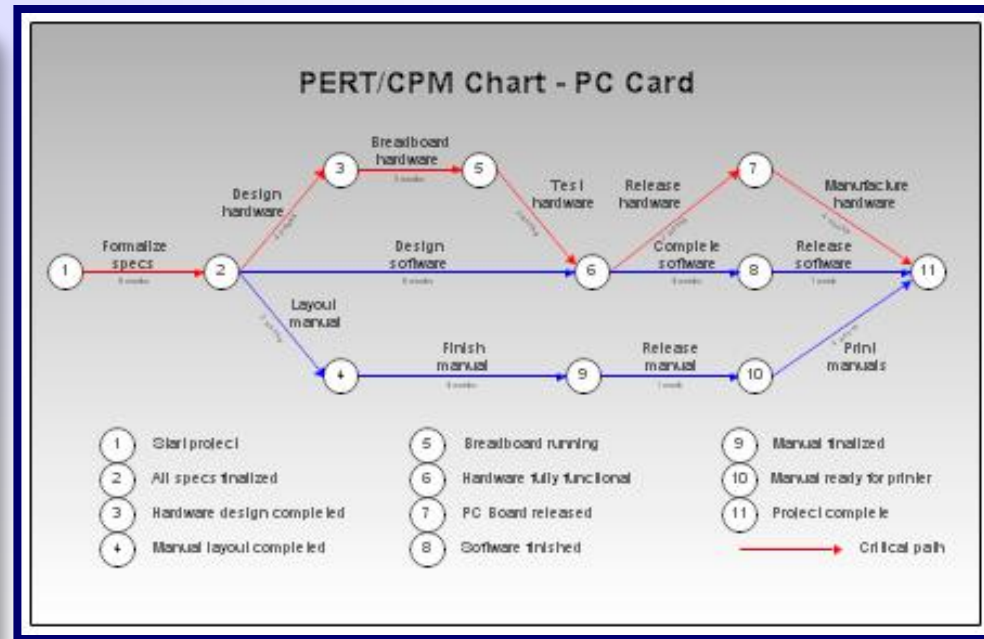
Phase 3 - Execution with Controls

As the work of the project begins, the Project Manager must have near total control over all aspects of project. He/she assigns resources/budget to tasks and assigns tasks to Project Team members.

Goal is to keep the project on-track, on-time, within budget and within quality and risk parameters!

Phase 3 - Execution with Controls

Project Manager must implement appropriate control systems to track performance against budget to monitor:

- ✓ **<u>Time</u>** – Is project on-time?
- ✓ **<u>Cost</u>** – Is project within budget?
- ✓ **<u>Quality</u>** – Is the quality within standards?
- ✓ **<u>Change</u>** – What impact have changes had on time, cost, scope and quality?
- ✓ **<u>Risk</u>** – Is project within established risk parameters?

Phase 3 - Execution with Controls

- Determine the points of greatest risk, e.g., tasks on the critical path.

- Exercise tighter control on these tasks and less control on tasks with greater float time and more budget flexibility.

- <u>Note</u>: As float time is expended, tasks not previously on the Critical Path may move onto it!

Phase 4 - Closure

- Deliverables, approval/acceptance by customer
- Budget accounting
- Legal – permits, approvals, occupancy
- Reassignment of staff and residual resources
- Document process

Case Study: Woody's Custom Woodworking

The Custom Woodworking Company is a small-to-medium sized custom furniture and cabinet making company, with head-office and a spacious plant site in the mid-west. It's Chairman and Chief Executive Officer is Ron Carpenter now in his late-sixties. His wife Mrs. Emelia Carpenter, being an aggressive business woman and somewhat younger than her husband, now effectively runs the company.

Ron Carpenter is affectionately known to all as "Woody" and so the company is generally known as "Woody's." Woody, after an apprenticeship as a cabinet maker, started his small furniture manufacturing business back in 1980 and he and his wife moved to their present location in 1985. The company quickly gained a reputation for attractively designed and well constructed furniture, using imported hardwoods and indigenous softwoods for its products. Woody's now produces custom furniture to order, several lines of furniture for wholesaler/retailers, and a number of variations of standard kitchen and bathroom cabinets, including units made to order.

Over the years the Carpenters continued to prosper and built up a loyal staff and work force. More recently their son, John Carpenter, has joined the company's management after having obtained a business degree at the local university. At John Carpenter's insistence, lured by longer production runs and higher and more consistent mark-ups, the company has moved into subcontract work supplying and installing counter-tops, cabinets and similar fixtures for new commercial construction. To date, Woody's has established a well-founded reputation for supplying millwork to the construction industry.

Research Administration for Scientists

Key Personnel

Chairman & CEO	**Ron Carpenter**
President	Mrs. Emelia Carpenter
Executive Vice President	Kim Qualey
Director	John Carpenter
VP Production	**Miles Faster**
VP Finance and Administration	Spencer Moneysworth
VP Personnel	Molly Bussell
VP Sales and Estimating	Bruce Sharpe
Controller	Kim Cashman
I. Leadbetter (Ian)	**Woody's Project Manager**
R. Schemers (Randy)	Principal, Schemers and Plotters (S&P), industrial design consultants
A. Fowler (Alfred)	Director, Expert Industrial Developers (EID), industrial property developers and contractors
I. Kontrak (Ivar)	EID's Project Manager
D. Rivett (Dave)	I. Beam Construction Ltd., steel fabricators and installers
B. Leakey (Bert)	Classic Cladding Co., cladding and roofing contractors
C. Droppe (Charlie)	I. C. Rain Ltd., water-proofing contractors
A. Dent (Amos)	Tinknockers Associates, mechanical contractors
O. Volta (Olaf)	Zapp Electric Co., electrical contractors
E. Forgot (Eddie)	Piecemeal Corporation, equipment suppliers
W. Easley (Win)	Project management consultants

The Opportunity

There has been a mini-boom in commercial construction in the area. With the possibility of a major airport expansion, and increased free-trade opportunities, Bruce Sharpe (VP of Sales and Estimating) persuaded Woody's directors that they were well placed to expand their manufacturing business. Miles Faster (VP of Production), regularly complained that the company's production efficiency was being thwarted by lack of manufacturing space, made a pitch to John Carpenter for moving to completely new and more modern facilities. John Carpenter, with a vision of growth based on computer controlled automation, talked over the idea with his father. Woody discussed it with his wife who in turn brought Kim Cashman (Controller) and Spencer Moneysworth (VP of Finance and Administration) into the debate.

Cashman and Moneysworth felt strongly that they should remain in their current location since there was spare land on their property, even though it was not the most convenient for plant expansion. They argued that not only would this avoid the costs of buying and selling property, but more importantly avoid the interruption to production while relocating their existing equipment. Besides, the nearest potential location at an attractive price was at least fifteen miles further out from the residential area where most of them lived. Polarization of opinions rapidly became evident and so, in the spring of 2000, Woody called a meeting of the directors and key personnel to resolve the issue. After a visit to the factory floor and a prolonged and sometimes bitter argument lasting into the early hours, it was agreed that the company would stay put on its existing property.

The Project Concept

It was agreed at the meeting that additional production capacity would be added equivalent to 25% of the existing floor area. The opportunity would also be taken to install air-conditioning and a dust-free paint and finishing shop complete with additional compressor capacity. Equipment would include a semi-automatic woodworking production train, requiring the development and installation of software and hardware to run it. The President and Executive Vice Presidents' offices would also be renovated.

At the meeting, the total cost of the work, not including office renovation, was roughly estimated at $17 million. Woody agreed to commit the company to a budget of $17 million as an absolute maximum for **all** proposed work and the target date for production would be eighteen months from now. To give Woody's personnel a feeling of ownership, Molly Bussell (VP of Personnel) proposed that the project should be called Woody 2000. Spencer Moneysworth would take responsibility for Project Woody 2000.

Planning

Moneysworth was keen to show his administrative abilities. He decided not to involve the production people as they were always too busy and, anyway, that would only delay progress. So, not one for wasting time (on planning), Moneysworth immediately invited Expert Industrial Developers (EID) to quote on the planned expansion. He reasoned that this contractor's prominence on the industrial estate and their knowledge of industrial work would result in a lower total project cost.

Meanwhile, Kim Cashman developed a monthly cash flow chart as follows:

- First he set aside one million for contingencies.
- Then he assumed expenditures would be one million in each of the first and last months, with an intervening ten months at $1.4 million each.

He carefully locked the cash flow chart away in his drawer for future reference. All actual costs associated with the project would be recorded as part of the company's normal book-keeping.

Upon Moneysworth's insistence, EID submitted a fixed-price quotation. It amounted to $20 million and an eighteen month schedule. After Moneysworth recovered from the shock, he persuaded Woody's management that the price and schedule were excessive. (For their part, EID believed that Woody's would need considerable help with their project planning and allowed for a number of uncertainties.) Further negotiations followed in which EID offered to undertake the work based on a fully reimbursable contract.

Moneysworth started inquiries elsewhere but EID countered with an offer to do their own work on cost plus but solicit fixed price quotations for all sub-trade work. Under this arrangement EID would be paid an hourly rate covering direct wages or salaries, payroll burden, head-office overhead and profit. This rate would extend to all engineering, procurement, construction and commissioning for which EID would employ Schemers and Plotters (S&P) for the building and industrial design work. Moneysworth felt that the proposed hourly rate was reasonable and that the hours could be monitored effectively. He persuaded Woody's directors to proceed accordingly.

The Design

A couple of months later as S&P commenced their preliminary designs and raised questions and issues for decision, Moneysworth found he needed assistance to cope with the paper work. John Carpenter suggested he use Ian Leadbetter, a bright young mechanical engineer who had specialized in programming semi-automatic manufacturing machinery. Moneysworth realized that this knowledge would be an asset to the project and gave Leadbetter responsibility for running the project. Ian was keen to demonstrate his software skills to his friend John Carpenter. So, while he lacked project management training and experience (especially any understanding of "project life-cycle" and "control concepts") he readily accepted the responsibility.

During the initial phases of the mechanical design, Ian Leadbetter made good progress on developing the necessary production line control software program. However, early in design EID suggested that Woody's should take over the procurement of the production train directly, since they were more knowledgeable of their requirements. Miles Faster jumped at the opportunity to get involved and decided to change the production train specification to increase capacity. Because of this, the software program had to be mostly rewritten, severely limiting Leadbetter's time for managing the project. It also resulted in errors requiring increased debugging at startup.

Neither Moneysworth nor Leadbetter was conscious of the need for any review and approval procedures for specifications and shop drawings submitted directly by either S&P or by Eddie Forgot of Piecemeal Corporation, the suppliers of the production train. In one two-week period, during which both Faster and Leadbetter were on vacation, the manufacturing drawings for this critical long-lead time equipment sat in a junior clerk's in-tray awaiting approval. For this reason alone, the delivery schedule slipped two weeks, contributing to a later construction schedule conflict in tying-in the new services.

Construction

Site clearing was tackled early on with little difficulty. However, as the main construction got into full swing some eight months later, more significant problems began to appear. The change in production train specification made it necessary to add another five feet to the length of the new building. This was only discovered when holding-down bolts for the new train were laid out on site, long after the perimeter foundations had been poured. The catalogue descriptions and specifications for other equipment selected were similarly not received and reviewed until after the foundations had been poured.

Leadbetter was not entirely satisfied with the installation of the mechanical equipment for the dust-free paint shop. As a registered mechanical engineer, he knew that the specifications governed the quality of equipment, workmanship and performance. However, since these documents had still not been formally approved, he was loath to discuss the matter with Ivar Kontrak. Instead, he dealt directly with Amos Dent of Tinknockers Associates, the mechanical sub-contractor. This led to strained relations on the site.

Another difficulty arose with the paint shop because the local inspection authority insisted that the surplus paint disposal arrangements be upgraded to meet the latest environmental standards.

Startup

Two years after the project was first launched, the time to get the plant into production rapidly approached. However, neither Moneysworth nor Leadbetter had prepared any meaningful planning for completion such as owner's inspection and acceptance of the building, or testing, dry-running and production start-up of the production train. They also failed to insist that EID obtain the building occupation certificate. Moreover, due to late delivery of the production train, the "tie-in" of power and other utility connections scheduled for the annual two-week maintenance shut-down could not in fact take place until two weeks later.

These factors together resulted in a loss of several weeks of production. Customer delivery dates were missed and some general contractors cancelled their contracts and placed their orders for millwork elsewhere. Finished goods inventories were depleted to the point that other sales opportunities were also lost in the special products areas on which Woody's reputation was based.

Control

Costs arising from these and other changes, including the costs of delays in completion, were charged to Woody's account. Project overrun finally became reality when actual expenditures exceeded the budget and it was apparent to everyone that the project was at best only 85% complete. Cashman was forced to scramble for an additional line of credit in project-financing at prime plus 2-1/2%, an excessive premium given Woody's credit rating. From then on, Woody's was in a fire fighting mode and their ability to control the project diminished rapidly. They found themselves throwing money at every problem in an effort to get the plant operational.

During Woody's period of plant upgrading, construction activity in the region fell dramatically with general demand for Woody's products falling similarly. Even though Sharpe launched an expensive marketing effort to try to regain customer loyalty, it had only a marginal effect.

Post Project Appraisal

The net result was that when the new equipment eventually did come on-line, it was seriously under-utilized. Production morale ebbed. Some staff publicly voiced their view that the over-supply of commercial space could have been foreseen even before the project started, especially the oversupply of retail and hotel space, the prime source of Woody's contracts. John Carpenter, not a favorite with the older staff, was blamed for introducing these "new fangled and unnecessarily complicated ideas."

Because of this experience, Woody's President Emelia Carpenter retained project management consultant Win Easley of W. Easley Associates to conduct a post project appraisal. Easley had some difficulty in extracting solid information because relevant data was scattered amongst various staff who were not keen to reveal their short-comings. Only a few formal notes of early project meetings could be traced. Most of the communication was on hand-written memos, many of which were not dated. However, interviews with the key players elicited considerable information, as has been outlined above.

Case Study Exercise

The incidents described in this case study are typical of the types of things that happen in real-life projects. They are a reflection of peoples' attitudes and the way they do things. Perhaps they do not all happen on the same project. Yet the reality is that if project sponsors do not start out with an understanding of project management and its processes, the probability of these kinds of happenings are quite high! One of the best ways of learning is from mistakes - preferably from those of other people.

The focus of this case study centers on construction. However, the project has served to bring to light many of Woody's management short-comings and the need for change. Can you spot the real source of the problems and what needs to be done to fix them?

Your task is to show how you would run this project properly from the beginning.

Case Study Discussion Questions

- Develop a Business Case:

  Explain/critique the business case for the Woody 2000 Project?

- Undertake a Feasibility Study:

  How well was it conceived and executed?
  What improvements would you suggest?

- Define Project Parameters:

  Were they sufficiently defined?
  Why was the renovation of executive offices added to the project?

- Appoint the Project Manager:

  Who was it? Was he the best choice?

Case Study Discussion Questions

- Was the Project Management Plan adequate? What improvements would you suggest?

- The budget was set at $17 million. Was a rational process followed?

- Moneyworth did not involve the production staff in the planning process. Your opinion?

- He sought a "fixed price" quote from EID. Was this wise? What problems did it create?

- Critique the issues surrounding the development of Cashman's monthly cash flow chart.

Case Study Discussion Questions

- Faster decided to change the production train specification. Were the rules for making project modifications clear? What problems did this decision create?

- What plans were made for project closure, e.g., inspection and acceptance of building, testing of production train?

COMP 918: Research Administration for Scientists

Understanding Your Organization, Its Mission, Your Boss and Effective Supervision Techniques!

Tim Quigg, Lecturer and Associate Chair for Administration, Finance and Entrepreneurship Computer Science Department, UNC-Chapel Hill

To Be Successful in Any Organization, One Must First Explore These Important Questions

- What is the structure of the organization and how does it influence the way decisions are made?

- What are the goals of the organization (its "mission")?

- What are your goals – both professional and personal?

Ideally there will be considerable overlap.

Then determine how to accomplish some of both (organizational and personal goals) by developing skills that enhance your ability to succeed in the organization as both a supervisor and as a subordinate.

First: What is the structure of the organization and how does it influence the way decisions are made? (What are the constraints, who participates?)

The structure of an organization impacts the:

- Lines of communication, policies, authority and individual staff responsibilities.

- Extent and nature of how leadership is distributed throughout the organization.

- Method for information dissemination within the organization.

Organizational structures are typically either hierarchical or flat.

Three "Schools" of Organization Theory

1. Hierarchical/Classical
2. Human Relations/Behavioral
3. Organic/Systems

Think of your current organization/department/lab. Which of these three "schools" best describes it?

Hierarchical/Classical School

- Views organizations as <u>Machines</u>!
- Draws its inspiration from <u>Engineering</u>.
- Focuses on:
  - Lines of authority
  - Specialization/expertise
  - Division of Labor
  - Rules and regulations
  - Separation of line and staff
- Frederick Taylor's focus on job design efforts (specialization) of scientific management and Max Weber's celebration of bureaucracy.
- Social structure is a pyramid (only one person is without a supervisor – the CEO).

Advantages

- Employees recognize defined levels of leadership.

- Authority and levels of responsibility are obvious.

- Each employee's role within the organization is clearly defined as is their relationship to other employees.

- Opportunities for promotion motivate employee performance.

- The development of "specialists" and specialist managers is encouraged.

- Employees become loyal to their department and work group.

As organizations grew in size during the 20th century, hierarchical structures were popular because they could ensure command and control of the organization!

Disadvantages

- Communication across departments tends to be slow. Supervisors often want to approve all messages thus creating delay and confusion.

- The higher a person is in the organization, the more removed he/she is from the customers. Thus, the employees who deal directly with customer problems often have the least authority to solve them.

- Bureaucracy often hinders the speed and ability of the organization to adapt to changing environments.

- Departments tend to compete with one another, often making decisions that benefit the department but not the organization.

- Salaries of multiple layers of management increase the cost of operations.

Assumptions:

- People located higher in organization are smarter.
- They have better information; therefore, they better know what's going on in the organization.
- Watching over people (preventing them from making mistakes) is a primary task of management!

Reality:

- People tend to say what they think the boss wants to hear, thus distortions occur at every level of reporting.
- The greater the number of levels, the greater the opportunity for factual distortions.
- The higher you go in an organization the more dissonance between perception and reality.
- Therefore, higher level managers often make decisions based upon completely fraudulent data!

Human Relations/Behavioral School

- Views organizations as Groupings of People.

- Draws inspiration from Biological Science.

- Focuses on:

  - Delegation of authority

  - Employee autonomy

  - Trust and openness

  - Concern for "whole person"

  - Interpersonal dynamics

- Chester Barnard's Functions of the Executive (1938) emphasized organizations as cooperative systems and the importance of leadership.

Assumptions

- People are connected, but often laterally and certainly not in pyramids.

- No "alpha person" on top.

- Authority is distributed more evenly.

- Emphasis on dynamic, functional work groups.

- "Flat" organization structure.

- Works best with professional, scientific or technical organizations.

Advantages

- The removal of excess layers of management improves coordination and speed of communication between employees.

- With fewer management levels, employees are "supervised" less and they are encouraged to participate in decision-making more.

- Each employee's level of responsibility in the organization is elevated.

- Since few departments exist, emphasis is on making decisions that are best for the organization, not the department.

In the 1990's many hierarchical organizations were forced to "downsize" by reducing layers of middle management, thus becoming "flatter."

Disadvantages

- Employees often lack a specific boss to report to which may create confusion and possible power struggles among management.

- Flat organizations tend to produce a lot of generalists, but few specialists.

- The specific job function for employees may be unclear.

- Tasks that are viewed as unpleasant may go undone - When its everybody's job, it may be nobody's job.

- Decentralized decision-making may result in inconsistent or even contradictory decisions.

Larger organizations often struggle to adapt to a flat organization structure unless they divide into smaller, more manageable units.

Organic/Systems School

- Views organizations as Independent Entities or Organisms.

- Draws inspiration from Biological Science and Systems Theory.

- Focuses on:
  - Inputs
  - Outputs
  - Transactions
  - Feedback

- Guiding Principle: Organizations continually strive for equilibrium. As they experience new environmental stimuli, they seek to adapt and find a new state of equilibrium.

Special Case: Virtual Organizations

- Made possible through technology (computers, high-speed communications, internet).

- Decentralized and non-hierarchical.

- Often transitory.

- Often voluntary (e.g., Linux, Scientific Collaborations such as MIDAG at UNC-CH).

- Organized around common interests or problems.

No "brick and mortar" location, no paid employees, no bureaucracy – Yet they work!

So, which characteristics do you see in your organization?

What impact does the particular structure of your organization have on:

- How decisions are made?
- How satisfied you are working in the organization?
- How successful the organization is at achieving its goals?

Are some type of organizations better suited to a particular structure?

How about:

- The military?
- Large corporations?
- Universities? Research-focused organizations?

Aspects of all three
may exist simultaneously in research
organizations and universities.
Often different levels of an organization
will be structured differently. Recognizing
the structure will help you understand
how to navigate your way
toward success!
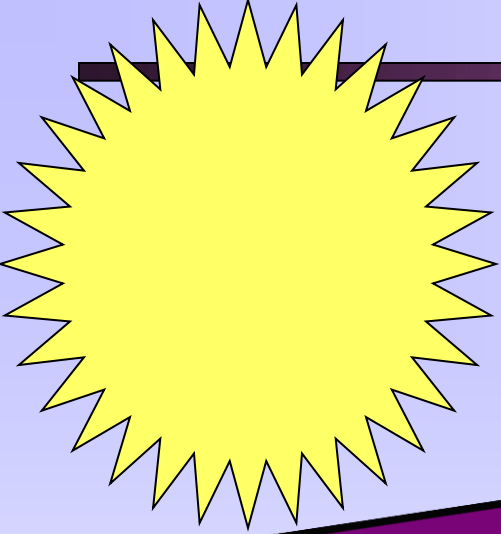
Understanding the structure and the "rules" can make what otherwise seems an irrational environment begin to make sense. And only when it makes sense, can you know how to operate effectively within it!

Remember, when you become a supervisor you will have considerable influence over the structure of "Your Shop" (Lab).

You don't have to repeat the mistakes of your past supervisors.

You can do better!

Second: What are the goals of the organization (its "mission")…

Mission is the primary reason for an organization's existence! Its purpose!

How can you determine the true mission of an organization?

How can you determine the true mission of an organization?

- **<u>Check the budget</u>** – How are resources allocated? When cuts are made, what criteria are used?

- What metrics are used to evaluate success?

- Who are the primary "clients"?

> Don't just read the propaganda:
> Ask, Listen and Observe!

Second: What are the goals of the organization (its "mission")...

Be honest with yourself, what do you want to accomplish in the next 2 years, 5 years, 10 years? How about relationships? Family?

Seek a work setting congruent with your values/goals...

"...where your work activities (addressing the organization's mission) also address some of your professional/personal goals."

You're looking for a "two-for."

But to do so, you must first identify the vital tasks that contribute to accomplishing these goals and then focus your efforts on them!

Working hard doesn't do any good if you're working on the wrong things!

Effective Time Management

- To-Do lists are helpful, but they really don't provide assistance in establishing priorities

- Example: As a young faculty member, what would be your primary goal?
  - Getting tenure

- What helps you get tenure?
  - Publications
  - Research (funding)
  - Patents (in some cases)
  - Teaching

But you don't want to get tenure and then get a divorce, so consider:

- Personal priorities

- Spouse - family

- Other things that make life worth living!

My Approach to Time Management

- **Definitions:**
  - Imperative – has a deadline looming (time critical)
  - Vital – directly impacts your career/life

- **Four categories:**
  - Imperative and vital – gotta do it and gotta do it now!
  - Vital but not imperative – gotta do it, but it can wait awhile.
  - Imperative but not necessarily vital – hardest of all, depends on the value you place on it.
  - Not imperative and not vital – can wait till tomorrow. These are the real "time killers"!

Task	Imperative and Vital	Vital not Imperative	Imperative not Vital	Not imperative and not vital
Your grant application is due today	X			
Grading papers/exams		X		
Your tenure package is due to Chair today	X			

Task	Imperative and Vital	Vital not Imperative	Imperative not Vital	Not imperative and not vital
Hanging pictures in your office				X
Getting a piece of equipment fixed you will soon need (but you don't need it today)		X		
Return a call to your spouse about dinner	X			

Task	Imperative and Vital	Vital not Imperative	Imperative not Vital	Not imperative and not vital
Throwing a party for your lab				X
Keeping up with the literature in your field		X		
Reviewing the agenda for next month's department retreat				X

Task	Imperative and Vital	Vital not Imperative	Imperative not Vital	Not imperative and not vital
Your NIH Program Officer needs a revised budget by 5:00 pm	X			
Attending an outreach meeting for taking science to middle school students			X	
Review a manuscript for a journal			X	

Effective Time Management

Remember: You must regularly review and reclassify tasks.

As deadlines draw near, more tasks become imperative!

Efficiency - Effectiveness
It's A Balancing Act!
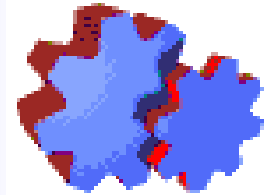
Efficiency – Producing the greatest quantity of work for each unit of resource expended (or producing a unit of work for the smallest possible expenditure of resources).

Effectiveness – Successfully accomplishing the goals/objectives of the organization.

Fulfilling Its Mission!

Perils of Over-Emphasizing Efficiency

- Can lead to the faulty belief that efficiency equals effectiveness.

- Sub-Unit Optimization – If every sub-unit in an organization operates as efficiently as possible, the overall organization operates at peak efficiency. Right?

Well, not always!

Sub-Unit Optimization

Sometimes one unit may need to operate inefficiently in order to create an overall organizational efficiency.

Example 1: UNC space study report due at an inconvenient time.

- It needed to be done, but why was it due on May 15?
- This date conflicted with end of semester grading and graduation.
- Administrators focused on the timing that was best for them without considering the impact on the organization.

Sub-Unit Optimization

Sometimes one unit may need to operate inefficiently in order to create an overall organizational efficiency.

Example 2: "Patch Adams" movie, starring Robin Williams and Monica Potter which was filmed on the UNC-CH campus in the summer of 1998!

NEWS - Robin Williams to film Patch Adams movie at UNC-CH; acting wannabes sought May 9

CHAPEL HILL -- If you ever hoped to appear -- or maybe even act -- in a major motion picture, today's your lucky day. Oscar-winning actor Robin Williams is coming to film Universal Pictures' movie "Patch Adams" at the University of North Carolina at Chapel Hill campus next month. Other shooting locations include Asheville and San Francisco.   Universal officials will hold a casting call for non-speaking extra roles Saturday, May 9, from noon to 2 p.m. at the Regal University Hotel at 2800 Campus Walk Ave. in Durham.

People of all ages, shapes, sizes and color are needed as extras, and no experience is needed. The film is set in the early 1970s, so casting officials especially need men willing to grow sideburns and shoulder-length hair. Just bring a recent snapshot of yourself, 4-by-6-inch or smaller, that you don't mind parting with, because you won't get it back. Universal officials ask that people not call the hotel for more information.

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CHAPEL HILL -- If you ever hoped to appear -- or maybe even act -- in a major motion picture, today's your lucky day. Oscar-winning actor Robin Williams is coming to film Universal Pictures' movie "Patch Adams" at the University of North Carolina at Chapel Hill campus next month. Other shooting locations include Asheville and San Francisco. Universal officials will hold a casting call for non-speaking extra roles Saturday, May 9, from noon to 2 p.m. at the Regal University Hotel at 2800 Campus Walk Ave. in Durham.

People of all ages, shapes, sizes and color are needed as extras, and no experience is needed. The film is set in the early 1970s, so casting officials especially need men willing to grow sideburns and shoulder-length hair. Just bring a recent snapshot of yourself, 4-by-6-inch or smaller, that you don't mind parting with, because you won't get it back. Universal officials ask that people not call the hotel for more information.

We even attracted a few protesters. After all, this is Chapel Hill!

And Steve Weiss, UNC Computer Science Chair was selected to be an extra!

Steve's Experience on the Set

- Everyday a three-man carpentry crew was seen "hanging around" with apparently nothing to do but smoke cigarettes (terribly inefficient use of resources).

- Then one day, the Director stopped filming during a key scene, concerned that Robin Williams appeared to be shorter than Monica Potter.

- The carpenters jumped into action, built a platform for him to stand on, and after just a brief delay, filming resumed.

What costs more, three carpenters with nothing to do until they are needed or loosing a day of filming on location?

Sub-Unit Optimization

- Lesson: Sometimes one unit may need to operate inefficiently in order to create an overall organizational efficiency.

- Overemphasis on efficiency can take emphasis off effectiveness (mission).

- A perfectly efficient organization may not accomplish it's mission (therefore it may not be an effective organization).

What good is a cost-effective organization that accomplishes nothing important?

Third: Develop skills that will enhance your ability to succeed as both a supervisor and as a subordinate in the organization !

> Yes, as a successful academic scientist you will be a supervisor of people and a manager of resources.

Like it or not!

"Poor management is more than a nuisance at the edges of laboratory work. Scientists are human beings first, and ineffective leadership will wreak havoc. Labs will get thrown into turmoil, personality conflicts will undermine teamwork, discrimination will isolate group members, and the creativity so essential to truly great work will vanish, to say that leadership quality can make or break a research-driven organization is not an overstatement – it is the conclusion of scientists themselves."

Alice M. Sapienza
Managing Scientists: Leadership
Strategies in Scientific Research

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And she doesn't even mention the complexity of our work environment:

1. <u>Highly Diverse</u> - many different cultural backgrounds represented.

2. <u>Highly Competitive</u> – sponsored research dollars don't come easy.

3. <u>Highly Dynamic</u> – rapid changes in technology impact the work place, often in ways that cannot be predicted in advance.

But One Thing is Clear: An analysis of hundreds of thousands of exit interviews and questionnaires (even when controlled for education level, job classification and employer type) shows the singular importance of the relationship between the employee and her immediate supervisor in determining employee morale, productivity and job longevity!

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"Talent will be the oil of the 21st century."

Deborah Wince-Smith
Council on Competitiveness

- Cost of recruiting/developing top talent is substantial and increasing.

- Research organizations/universities can't afford to have supervisors "running off" talented employees.

- Most technical/scientific managers

  - Are well trained in their science.
  - Have little/no training in management.
  - Often don't know their limitations as managers.

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- Research organizations/universities can't afford to have supervisors "running off" talented employees.

Good news!
Management Skills can be learned!

Work Relationships are Two-Way Streets!

Each party (employee and supervisor) contributes to the success or failure of the relationship.

Most of us are both (we are a boss, and we also have a boss)!

We'll Begin with the Boss!

There is no "<u>one size fits all</u>" model of management and supervision.

- It is possible for two people with quite different personalities and management styles to be equally successful as managers in the same environment.

- One of the keys to success is to develop a management style that is comfortable for you – consistent with your personality.

- Don't try to be someone you aren't.

"If the only **tool** you have is a hammer, you tend to see every problem as a **nail**."

Abraham Maslow

My Goal for Today: Provide you with more "**tools**"!

As we review a wide variety of tools…

…please keep an open mind, look for tools you can adapt to your personality and be willing to "stretch yourself" a little!

Remember – Effective supervision is a "learned skill"!

What is the appropriate role for a supervisor?

(What metaphor best describes the role?)

Early in my career I adopted the following model:

- Hire the smartest, best qualified people I could find.
- Provide the resources they needed to be successful.
- Protect them from internal criticism.
- And then "stay out of their way." Don't over-manage.

There were good aspects to this approach, but it never seemed very satisfying.

What is the appropriate role for a supervisor?

(What metaphor best describes the role?)

Early in my career I adopted the following model:

- Hire the smartest, best qualified people I could find.
- Provide the resources they needed to be successful.
- Protect them from internal criticism.
- And then "stay out of their way." Don't over-manage.

Surely good managers did more than just hire good people and "stay out of their way."

I finally came upon something called the "Catalyst Model of Supervision" and it just felt right!

Catalyst

An agent that speeds up the reaction between two substances to create the desired end product.

Catalyst – A useful metaphor for understanding the primary role of the supervisor.

Supervisor is an agent that "speeds up the reaction" between people, resources and ideas to create the desired end product.

BUT HOW?

Characteristics of Successful Managers

1. Recognize that each person is unique and there are some things you can't change

2. Manage around weaknesses

3. Effective hiring techniques

4. Build effective teams

5. EME: Establish-motivate-evaluate (3 simple, but powerful components of supervision)

Characteristics of Successful Managers

6. Leverage the power of human motivation

7. Set meaningful goals

8. Practice responsible delegation techniques

9. Develop strong negotiation skills

10. Learn how to deal with difficult employees

Successful managers recognize that each person is unique. We have a special mix of knowledge, skill, experience and **talent**.

There are well established methods for measuring knowledge, skill and experience (education, degrees, past work experience and references).

But talent is far more difficult to measure!

What Do We Mean By Talent?

Conventional wisdom

Talent is a rare ability pertaining to only certain aspects of human activity such as sports or the arts!

What Do We Mean By Talent?

Myth – with enough hard work, we can accomplish anything!

Truth - Hard work allows us to develop our talent, but no amount of hard work can create talent!

A Good Definition of Talent

"Any **Recurring Pattern** Of Thought, Feeling Or Behavior That Can Be Productively Applied."

Marcus Buckingham & Curt Coffman

First, Break All The Rules (Gallup Organization)

Simply put – those behaviors you find yourself doing most often are likely to be your talents.

Characteristics of Successful Managers

1. Recognize that people are a <u>unique</u> blend of skills, knowledge, experience and <u>talents!</u>

2. If we are all different, then it's only logical that good managers would <u>treat people differently</u>.

> Figure out what motivates each employee and devise a system of appropriate rewards!

Sometimes good intensions aren't enough!

- As Sales Manager for an Entre Computer Center, one day I praised a young woman for being that month's top salesperson during a regular meeting of the sales staff.

- She clearly looked distressed, but I didn't know why.

- After the meeting I asked her and she said "If you would have said all those nice things in private, it would have meant a lot to me. But by saying them in front of my peers it just embarrassed me."

- At first, I was shocked and quite frankly didn't understand!

- Why would she be embarrassed? I like to be praised in public and if I like it, surely everyone else must like it too!

But we're not all alike. And that's something good supervisors know!

Characteristics of Successful Managers

1. Recognize that people are unique.
2. Treat people differently.
3. <u>Manage around a weakness</u> (which can be thought of as a lack of talent)

Sometimes a work performance problem is really a lack of the right talent to do that aspect of the job.

If you have an otherwise good employee who consistently performs below expectations in one aspect of his job, what should you do?

- Have you communicated clear performance expectations?
- Have you provided all the necessary tools?
- Are you using the right motivation technique?
- Is the problem a lack of education/skill?
- If none of these applies, then the weakness may be associated with a lack of talent?

If the problem is a lack of talent, you must accept that you "can't teach talent"

(Attempts at remediation offer little chance for success, are quite expensive, and are almost always a waste of time!)

Good managers will find ways to make the non-talent become irrelevant by managing around it!

Ways to Manage Around a Lack of Talent

1. Devise a support system
   - 150 million Americans need eye glasses.
   - Poor speller – get spellchecker.
   - Forget appointments – computer reminders.
   - Story of mentally challenged worker
     - Cooking chicken at fast food restaurant
     - Goal – cook 6 at a time
     - Problem – couldn't count
     - Package chicken 6 per container
   - **<u>GOAL</u>** – Make the lack of talent irrelevant!

Ways to Manage Around a Lack of Talent

1. Devise a support system

2. Find a complementary partner
   - Most people are good at some things and not so good at other things.
   - Most jobs require unrealistic combinations of talents.

> **Goal – Build a partnership that is well-rounded even if the individuals aren't!**

Ways to Manage Around a Lack of Talent

1. Devise a support system
2. Find a complementary partner
3. Find an alternative role
   - Sometimes a person just isn't right for the job **but**
   - You may be able to move tasks around to better align job assignments with individual talents.
   - However, not everyone is meant for every job. In these cases, <u>act quickly</u>!   Nobody is well served by delays!

Effective Hiring Techniques

1. The best candidate is not necessarily the one who performed the same job somewhere else – even if he/she was successful!

2. Think past "has she done it before" to "does she have the right talent to succeed here?"

Example: If you have had considerable turnover in a job where the rules often change and the employee must continually be relearning new material, you may want to change your strategy from hiring based upon past experience to hiring based upon a demonstrated "love of learning".

Effective Hiring Techniques

3. Consider the candidate's commitment to the "mission" of the organization – inquire about his/her career and personal goals.

4. Know what role you expect the employee to play in bringing about the success of the organization and measure congruence with the candidate's personal goals.

5. If the person is to work on a team, consider how he/she will "fit in" with the group!

Effective Hiring Techniques

6. Follow your organization's policies for evaluating the credentials of job candidates but:

- look beyond the old definitions of "the best qualified" (education, experience) to…

- …the "best fit" (commitment to mission, right talents for success, ability to work as team member) and

- finally, <u>trust your instincts</u>!

Three Basic Tasks of Supervision

1. <u>Establish</u> clear performance expectations

2. <u>Motivate</u> performance

3. <u>Evaluate</u> performance

Sounds easy! But it's amazing how many problems in organizations are caused by failure of supervisors to get these three simple rules right.

Three Basic Tasks of Supervision

1. Establish clear performance expectations

  - **Common complaint** – "I didn't know she wanted me to do that." Just because you thought you communicated clearly doesn't mean you succeeded!

  - Focus on outcomes

  - Define metrics

Three Basic Tasks of Supervision

1. Establish clear performance expectations
2. Motivate Performance
   - Be positive, focus on strengths <u>but</u>
   - Provide input - suggestions
   - Require regular progress reports
   - Redirect as necessary

Remember, the supervisor is a "catalyst", not just a bystander!

Three Basic Tasks of Supervision

1. Establish clear performance expectations
2. Motivate Performance
3. Evaluate Performance
   - Honest - Fair
   - No surprises
   - No changes in metrics
   - Don't "sugar-coat"

Three Basic Tasks of Supervision

1. <u>Establish</u> clear performance expectations

2. <u>Motivate</u> performance

3. <u>Evaluate</u> performance

Get these three tasks right and the rest will be a whole lot easier!

"If you want to go quickly, go alone. If you want to go far, go together."

Al Gore

Everyone talks about working in <u>teams</u> – but what makes a work group become an <u>effective team</u>?

An Effective Team Leader!

Effective Team Leaders – Set the vision and work to build cohesion within the team!

1. Relate work elements to the organization's mission. Most people want to contribute to things that really matter!

2. Emphasize the importance of each members' contribution.

3. Focus on the team more than on themselves.

Effective Team Leaders – Seek to build trust within the team!

1. Refrain from playing favorites or engaging in office politics and never allow personal attacks from within or outside of the group.

2. Refuse to allow passive-aggressive or self-oriented behaviors.

3. When dealing with difficult issues, they make it easier for team members to take a chance with an idea by "going first" and becoming vulnerable.

Effective Team Leaders – Focus on strengths, not weaknesses!

1. Teams are composed of members with complementary skills for a reason. Playing to each member's strengths builds optimal team performance.

2. Ignore weaknesses (can't teach talent), except when dealing with issues of team cohesion!

3. Allow team members to grow as far as their abilities take them, even if it means they will leave the team.

Effective Team Leaders – Protect their teams and all the members!

1. Provide "high level" protection from excessive and potentially harmful external pressures.

2. Build pride in the team – leader gives credit to the team when things go right, but assumes all blame when things go wrong!

3. Provides the resources necessary to be successful.

Effective Team Leaders – Focus on results!

1. Emphasize <u>task behaviors</u>: setting goals, identifying tasks, gathering facts, clarifying, building consensus – all focused on results.

2. Teach <u>interaction behaviors</u>: encouraging participation, expressing feelings, reconciling disagreements, keeping communication open, building on each other's ideas – all designed to maintain positive team operations.

3. Get the job done with everyone <u>enjoying the ride</u>!

Effective Team Leaders - Encourage Informed Risk-Taking!

Peter Doherty, 1996 Nobel Laureate in Medicine (specificity of cell mediated immune defense)

"A Good Researcher Failed Every Time Except The Last One."

Employee Motivation is Based Upon:
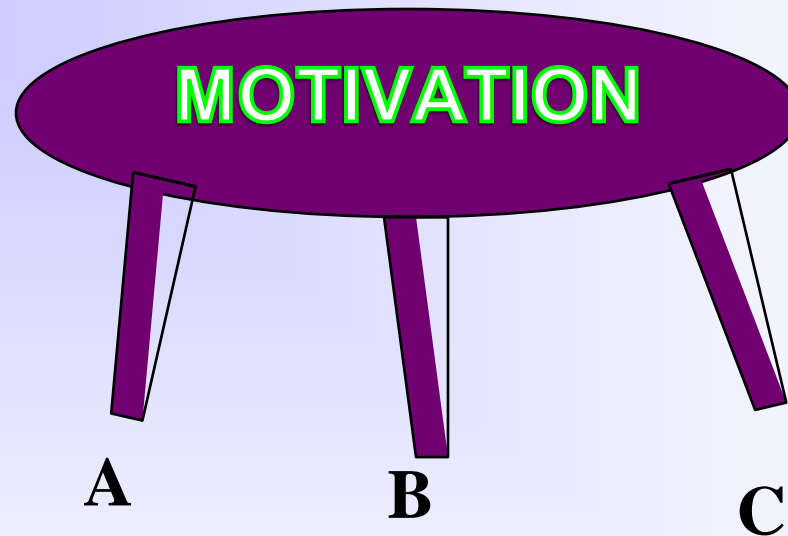
A = Does my job contribute to my personal goals?

B = Am I confident in my ability to do my job?

C = If I do a great job, will anyone even notice?

Rules For Effective Goal Setting

1. **Set goals that are important/challenging**

   - **Related to mission**

   - **Significant**

   - **Push you to achieve**

   - **Highly motivated**

2. State your goals in positive, not negative, terms!

- Focus on what you want –
  Not what you don't want.

- Keep a mental image of success.

- Stay away from negative thinking.

"Obstacles are those frightful things you see when you take your eyes off the goal."

Henry Ford

"Dreams are just thoughts. They become tangible goals when we write them down."

3. Write Your Goals Down.

- Helps to crystallize your intent.

- Requires precise thinking.

- Helps spot contradictory goals.

- Increases commitment.

"Goals Are Just Dreams With Deadlines."

Diana Scharf Hunt

4. Make your goals time specific
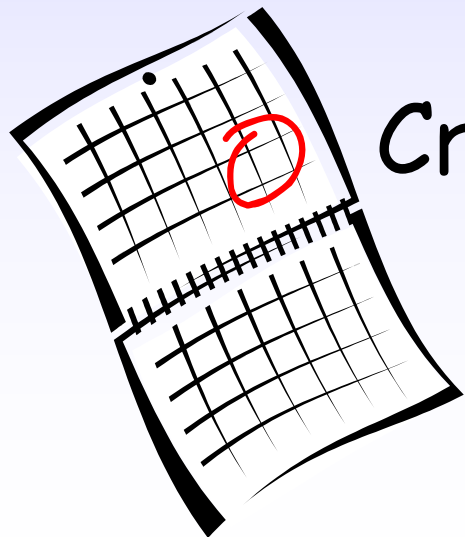
Creating deadlines is a powerful management technique!

5. Review your goals regularly!

- My approach: plastic-covered sheet in telephone book drawer.

- Reviewing keeps me focused.

- Be willing to modify/clarify when appropriate.

6. Don't give up! Stay committed and continue until you achieve your goals!

Responsible Delegation

A supervisor must learn to delegate both **Responsibility** and **Authority** in order to build an effective team!

Payoffs

1. Time to look at "Big Picture" and plan for the future.
2. Greater staff involvement = higher morale and greater employee investment in the enterprise.
3. More gets done when manager isn't the only "Funnel."
4. Creativity is enhanced!

Responsible Delegation

Risks/Problems

1. When a supervisor delegates and the employee's performance is poor, the process of correction may create stress for both parties.

2. Supervisor is accountable for decisions he/she didn't make.

3. When supervisor asks employees to do too much, they may become resistant ("Don't Dump on Me").

4. "I could have done it faster myself."

5. "Lose touch with operations."

If so, consider the concept of Management by Walking Around

Effective Negotiation Skills:

The key to maintaining positive relationships while navigating your way through organizations!

Two traditional ways to view negotiations

Hard Approach

- Contest of wills, where each side has a desire to "win." Sometimes at all costs!
- Extreme positions are taken and each party holds out for concessions from the other side.
- The other party responds in-kind.
- The process can be quite exhausting.
- And relationships are often harmed – sometimes beyond repair!

Two traditional ways to view negotiations

Soft Approach

- The dominant value is the desire to avoid conflict and maintain a positive relationship.
- The party with this value is inclined to make concessions readily.
- If one party makes all the concessions, she/he may feel exploited and eventually become resentful.
- And relationships are often harmed – sometimes beyond repair!

Problems with traditional negotiations

1. Arguing over positions is inefficient and dishonest because the parties:

   - Take extreme positions and only make small concessions.

   - Deceive the other party as to our true views.

   - Waste time and effort "playing games" that interfere with reaching agreement.

   - Drag our feet, threaten to "walk-out" <u>thus</u>

   - It increases the risk that no agreement will be reached!

Problems with traditional negotiations

2. Arguing over positions diverts attention <u>from</u> important issues <u>to</u> protecting egos because:

- Bargaining over positions may cause the parties to "defend against attack."

- The process makes it harder to change position because -

- Egos get involved <u>and</u>

> When we are busy protecting our ego, we tend to forget about everything else!

Problems with traditional negotiations

3. Arguing over positions endangers the ongoing relationship.

    - When there are winners and losers relationships suffer.

    - Anger and resentment are inevitable side-effects.

4. Simply "being nice" is no answer either.

    - It can leave you vulnerable.

    - May not produce a wise agreement.

    - O. Henry's **Gift of the Magi**. A lovely short story about a poor couple in Victorian England who try to buy a special gift for their spouse for Christmas. Sweet story – but didn't work well!

A Better Alternative: Principled Negotiation

- Technique developed by Roger Fisher and William Ury, Harvard Negotiation Project

- Three key points:

  1. Separate the people from the problem
  2. Focus on interests, not positions
  3. Invent options for mutual gain

1. Separate the people from the problem

- Stay away from taking positions, instead focus on what you want/need from the negotiation.

- **Goal** – Parties should see themselves working side-by-side, attacking the problem, not each other.

2. Focus on interests, not positions

- Artificial negotiating positions often obscure the parties real interests.

- When negotiations proceed from two artificial positions, the process of compromising may lead to a point of "logical agreement" that is unsatisfactory to both.

- Discuss what you want in an agreement (including relationship issues).

3. Invent options for mutual gain

- The pressure of negotiations can make it difficult to see optimal solutions.

- Set aside time outside of actual negotiation sessions to brainstorm for possible solutions.

  - Separate
  - With other party
  - With third party

Other Important Issues

1. If there are any non-negotiable issues, clearly state them up front.

2. Consider the impact of the negotiation process on both:

   - Relationship with other party
   - Next negotiation

"Numquam Incertus, Semper Apertus!"

("Never uncertain, always open!")

Found over an entryway to a fraternity bar in Heidelburg, Germany circa 15th Century.

A pretty good maxim for any manager!

Work Relationships are Two-Way Streets! Now let's consider the employee.

Each party (employee and supervisor) contributes to the success or failure of the relationship.

Yes, you can manage your boss (actually, what you are managing is the relationship).

Remember, most bosses in scientific and academic environments:

- Promoted from technical positions and have little if any management or supervisory training.

- "People Skills" may not be their strong point.

- Likely have had few, if any good role models to follow.

- Rarely get feedback on how they are doing.

Common complaints from employees about their supervisors

Over-Managing (Micro managing)

Under-Managing (Giving too little direction)

My opinion - Most people (bosses and employees alike) want to do a good job, and they are usually committed to the organization and its goals! But sometimes they just don't know what to do!

How can you appropriately manage the relationship with your boss?

1. Remember your purpose - maintain proper perspective.

- Obviously, you didn't choose your profession solely to make your current boss happy.

- You have responsibilities to "clients", e.g., patients, the public, colleagues, in addition to your current boss. This is particularly true in academia and in scientific fields.

- Sometimes the best thing you can do is remind your boss of why you chose a career in science.

- You may just help him/her remember the same!

2. Try to understand your boss.

- He/she has various strengths/weaknesses and talents/lack of talent (just like you).

- Expectations from higher management create pressures/stresses that are difficult to understand unless you are there.

- Remember: Our perception of reality is impacted by where "we sit" in an organization.

- Let your boss know you are sensitive to his/her issues (even if you don't understand them).

- Try to offer suggestions to address issues important to both you and your boss!

3. Learn how to complain (communicate) appropriately!
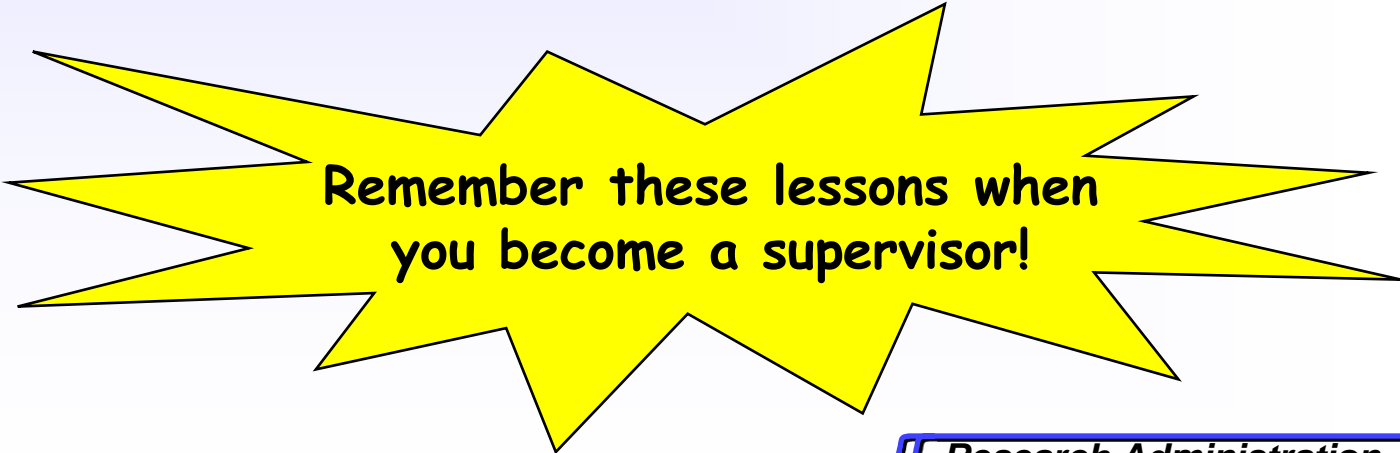
- Clearly state the issue and its impact (on you, the organization, clients) without getting defensive or too aggressive.

- Assume your boss wants to solve the issue as much as you do.

  > "I know we share a strong commitment to the academic progress of our students. That's why we agreed to meet weekly to discuss specific issues. Our inability to meet has caused the following problems."

- Ask for a recommitment or an alternate solution, e.g., delegate more authority to you to make decisions.

4. Compliment good behavior.

- If your boss does something that is good, reinforce it with a word of praise.

- Point out the specific result of your boss' good behavior.
  - It made you or someone else feel good.
  - A deadline was met.
  - Some other good outcome occurred.

Remember these lessons when you become a supervisor!

Interactive Activity:

Supervisory Skills

DELEGATION

<u>You (the lead scientist)</u> have just been asked by your supervisor to review a collaboration agreement before it must be submitted tomorrow morning. You are in the middle of finalizing your annual lab budget which must be submitted to your division director by noon tomorrow. It's your birthday and your spouse has planned a big party for you this evening. The only other person capable of helping with either of these tasks is an experienced post-doc who is in the middle of an important project assigned by you. She has had difficulty meeting deadlines in the past, and just last week you emphasized the importance of submitting this project on time. What do you do?

PERFORMANCE EVALUATION

Three months ago <u>you</u> hired a new lab technician, and while his work is quite good, there is a disturbing pattern immerging. He has called in sick the last two Mondays and has had to leave early on a number of days. You want to schedule a meeting with him to review these attendance issues, but feel a bit reluctant because he is such a nice person and when present, has done a good job. However, his frequent absences are causing problems in the lab because others depend on his work. What you do not realize until the meeting is that his absences have been caused by his need to care for a very sick parent. What do you do?

HANDLING DIFFICULT SITUATIONS

Dr. Roy, a senior member of your lab and your immediate supervisor, appears in your office on Monday morning with a new Research Associate (RA) from Estonia he has just "hired." Dr. Roy has not advised anyone at your institution about this, and he wants you (a post-doc working in his lab) to contact the proper administrators to get the RA on the payroll charged to his "XYZ Grant" account. You know this grant ended two months ago, and you really feel this is not part of your job! How do you respond to Dr. Roy? What do you say to the RA? What steps do you take to straighten out Dr. Roy's mess?

Dealing with Difficult Employees
<u>Background</u>

<u>CAUTION</u>: Severe mood swings, anxiety attacks, substance abuse, symptoms of schizophrenia or chronic depression require investigation and professional treatment.

You can't fix these problems. Don't try!

- Always follow your personnel policies carefully.

- Report what you observe and how the behavior impacts the workplace – be as specific as you can.

- Don't attempt to diagnose the cause, stay focused on what you observe and how it impacts the workplace.

Dealing with Difficult Employees
Focus On the Behavior

- Remember: The negative behavior has somehow worked for the employee in the past.

- Your goal is to neutralize the effectiveness of the undesirable behavior.

- Note: Many negative behaviors in the workplace have their origin in unhealthy family relationships or personal disappointments.

- Don't get "sucked into this trap", you are not a psychiatrist – stay focused on the behavior and always act on facts!

Dealing with Difficult Employees
Plan a Meeting with the Employee
(But first prepare yourself for the meeting)

- Separate the person's professional role from his/her personality.

- Don't get emotional.

- Don't take anything personally.

- Remember: It's not about you, it's about the employee's behavior.

- Finally: Don't assume the negative behavior is caused by negative intent – it may be from fear, confusion, lack of motivation, personal problems.

Dealing with Difficult Employees
Plan a Meeting with the Employee

- Do your homework
  - Always act on facts, not gossip or rumor.
  - If you haven't seen the behavior, get details from those who have.

- Plan meeting mechanics
  - Timing – end of day, end of week?
  - Location – quiet, private, no interruptions.
  - Who – just you and employee? Should you add HR rep, union rep, next level of supervision, other employees who have experienced the behavior?

Dealing with Difficult Employees
At The Employee Meeting

- Confront the problem directly.

- Deal with the behavior, not the person.

- Use "I" statements, not "You" statements.
  (I need everyone here on time ... not you are always late.)

- Give employee chance to offer an explanation and a solution.

Dealing with Difficult Employees
At The Employee Meeting

- If issues "hit the fan" stay focused on listening, not arguing (Ask: "What are your thoughts about …?").

- Stay calm and focused on behavior.

- If you reach a stalemate, end meeting with "Let's sleep on it and meet again on …"

- Be prepared and have a plan for how to handle any possible issue!

Dealing with Difficult Employees
Goal: Neutralize the Negative Behavior!

- Learned behaviors that have persisted for years are not easy to change – be patient, aim for continuous improvement, not instant success.

- Your goal is not to become "best friends" with the employee, you don't even have to like him/her. The goal is to modify the unacceptable behavior.

- Provide feedback to the employee, compliment when you see improvements and point out continuing problems with equal vigor.

Dealing with Difficult Employees
Goal: Neutralize the Negative Behavior!

- Don't give up easily, but know when you are at the end. Not all problems are fixable and not all employees are willing (able) to change. You must be willing to start termination procedures when appropriate.

- Be certain to have documented every step of the process consistent with your HR policies and be certain to have kept HR involved from the beginning.

Dealing with Difficult Employees
Ignoring the Problem is not an Option!

- One negative person can damage the workplace so severely that all productive work can be affected.

- Allowing one person to continue to disrupt the workplace influences the impression other employees have of your effectiveness as a supervisor.

Dealing with Difficult Employees
Ignoring the Problem is not an Option!

- Addressing the problem is challenging, requires a lot of work and may cause you to question your effectiveness as a supervisor.

- But addressing the problem will cause you to grow in confidence as you work toward a resolution (either modified behavior or termination).

- And the subsequent increase in stature you gain as a supervisor will make it much harder for another employee to display unacceptable behaviors in the future!

MacGregor Case Study

No question about it--some managers are better organized than others, but how often have you run into a really well organized manager--I mean really well organized? Not too often, I bet! In the course of my work I run into hundreds of managers a year, yet I can think of only one who managed to be super-organized--to the point where he had time to play an enormous amount of golf. As further proof of his organization, consider this: About two years after I ran into MacGregor, which incidentally is not his real name, he was promoted to the post of chief of operations at the corporate level--a fact I discovered when I saw his face looking out at me from the financial section of my newspaper above the announcement of his new executive assignment.

My encounter with MacGregor came about during the course of a study of the extent to which operating managers actually use participative management techniques in their dealings with subordinates. The problem with an inquiry of this nature is that nearly every manager either says that he uses a participative approach (because isn't that what every good manager does?) or maybe honestly believes that this is his preferred modus operandi; in any event, what I was interested in was information about behavior, not about beliefs (pious or otherwise). So I had to develop an indirect approach for use with the managers being interviewed and follow it up with some questions directed at the

subordinates they supervised. Accordingly, I developed a questionnaire that I used in interviewing more than 100 managers in ten major U.S. and Canadian firms. The first item on the questionnaire asked whether the interviewee held regular meetings with his subordinates; if so, how often; and what was the nature of the matters discussed. Finally, it tried to determine whether subordinates were offered the opportunity to initiate discussion and actively participate in the decision-making process or were merely afforded the opportunity to hear about decisions the boss had made.

MacGregor, who at the time was manager of one of the largest refineries in the country, was the last of more than 100 managers I interviewed in the course of the study. Although the interview had been scheduled in advance, the exact time had been left open; I was to call MacGregor at his office early in the week that I would be in the vicinity and set up a specific date and time.

Here's how that phone call went: The switchboard operator answered with the name of the refinery. When I asked for MacGregor's office, a male voice almost instantly said, "Hello." I then asked for MacGregor, whereupon the voice responded, "This is he." I should have recognized at once that this was no ordinary manager; he answered his own phone instantly, as though he had been waiting for it to ring. To my question about when it would be convenient for me to come see him, he replied, "Anytime." I said, "Would today be all right?" His response was, "Today, tomorrow, or Wednesday would be okay; or you could come Thursday, except don't come between 10:00 a.m. and noon; or you could come Friday or next week--anytime." I replied feebly, "I just want to fit in with your plans." Then he said, "You are just not getting the message; it makes no difference to me when

you come. I have nothing on the books except to play golf and see you. Come in anytime--I don't have to be notified in advance, so I'll be seeing you one of these days," and then he hung up. I was dumbfounded. Here was a highly placed executive with apparently nothing to do except play golf and talk to visitors.

I took MacGregor at his word and drove over immediately to see him without any further announcement of my visit. MacGregor's office, in a small building at one corner of the refinery, adjoined that of his secretary--who, when I arrived, was knitting busily and, without dropping a stitch, said to me, "You must be Mr. Carlisle; he's in there," indicating MacGregor's office with a glance at a connecting door.

MacGregor's office was large and had a big window overlooking the refinery, a conference table with eight chairs arranged around it (one of which, at the head, was more comfortable and imposing than the rest), an engineer's file cabinet with a series of wide drawers, two easy chairs, a sofa, a coffee table with a phone on it, and a desk. The desk had been shoved all the way into a corner; there was no way a chair could be slipped in behind it, and it was covered with technical journals. A lamp stood on the desk, but its plug was not connected to an outlet. There was no phone on the desk. MacGregor, a tall, slender man with a tanned face, stood by the window peering absently into space. He turned slowly when I entered his office and said, "You must be Carlisle. The head office told me you wanted to talk to me about the way we run things here. Sit down on the sofa and fire away."

"Do you hold regular meetings with your subordinates?" I asked. "Yes, I do," he replied.

"How often?" I asked.

"Once a week, on Thursdays, between 10:00 a.m. and noon; that's why I couldn't see you then," was his response.

"What sorts of things do you discuss?" I queried, following my interview guide.

"My subordinates tell me about the decisions they've made during the past week," he explained. "Then you believe in participative decision making," I commented.

"No--as a matter of fact, I don't," said MacGregor.

"Then why hold the meetings?" I asked. "Why not just tell your people about the operating decisions you've made and let them know how to carry them out?"

"Oh, I don't make their decisions for them and I just don't believe in participating in the decisions they should be making, either. We hold the weekly meeting so that I can keep informed on what they're doing and how. The meeting also gives me a chance to appraise their technical and managerial abilities," he explained. "I used to make all the operating decisions myself, but I quit doing that a few years ago when I discovered my golf game was going to hell because I didn't have enough time to practice. Now that I've quit making other people's decisions, my game is back where it should be."

You don't make operating decisions anymore?" I asked in astonishment.

You don't make operating decisions anymore?" I asked in astonishment.

"No," he replied. Sensing my incredulity, he added, "Obviously you don't believe me. Why not ask one of my subordinates? Which one do you want to talk to?"

"I haven't any idea; I don't even know how many subordinates you have, let alone their names. You choose one," I suggested.

"No, I wouldn't do that--for two reasons. First, I don't make decisions, and second, when my subordinate confirms that I don't make decisions, you'll say that it's a put-up job, so here is a list of my eight immediate subordinates, the people who report directly to me. Choose one name from it and I'll call him and you can talk to him," said MacGregor.

"Okay--Johnson, then. I'll talk to her if she's free," said I.

"I'm sure she's able to talk to you. I'll call her and tell her you're on the way over." Reaching for the phone, he determined that Johnson wasn't doing anything either, and would be happy to have someone to talk to.

I walked over to Johnson's unit and found her to be in his early thirties. After a couple of minutes of casual conversation, I discovered that MacGregor and all eight of his subordinates were chemical engineers. Johnson said, "I suppose MacGregor gave you that bit about his not making decisions, didn't he? That man is a piece of work."

It isn't true though, is it? He does make decisions, doesn't he?" I asked.

"No, he doesn't; everything he told you is true. He simply decided not to get involved in decisions that his subordinates are being paid to make. So he stopped making them, and they tell me he plays a lot of golf in the time he saves," said Johnson.

Then I asked Johnson whether she tried to get MacGregor to make a decision and her response was: "Only once. I had been on the job for only about a week when I ran into an operating problem I couldn't solve, so I phoned MacGregor. He answered the phone with that sleepy 'Hello of his. I told him who I was and that I had a problem. His response was instantaneous: 'Good, that's what you're being paid to do, solve problems, and then he hung up. I was dumbfounded. I didn't really know any of the people I was working with, so because I didn't think I had any other alternative, I called him back, got the same sleepy 'Hello, and again identified myself. He replied sharply, 'I thought I told you that you were paid to solve problems. Do you think that I should do your job as well as my own? When I insisted on seeing him about my problem, he answered, 'I don't know how you expect me to help you. You have a technical problem and I don't go into the refinery anymore; I used to, but my shirts kept getting dirty from the visits, so I pretty much stick in my office. Ask one of the other supervisors. They're all in touch with what goes on out there.

"I didn't know which one to consult, so I insisted again on seeing him. He finally agreed-- grudgingly--to see me right away, so I went over to his office and there he was in his characteristic looking-out-the- window posture. When I sat down, he started the dirty-shirt routine but when he saw that I was determined to involve him in my problems, he sat down on the sofa in front of his coffee table and, pen in hand, prepared to write on a pad of paper. He asked me to state precisely what the problem was and he wrote down exactly

what I said. Then he asked what the conditions for its solution were. I replied that I didn't know what he meant by that question. He replied, 'If you don't know what conditions have to be satisfied for a solution to be reached, how do you know when you've solved the problem? I told him I'd never thought of approaching a problem that way and he replied, 'Then you'd better start. I'll work though this one with you this time, but don't expect me to do your problem solving for you because that's your job, not mine. "I stumbled through the conditions that would have to be satisfied by the solution. Then he asked me what alternative approaches I could think of. I gave him the first one I could think of--let's call it X--and he wrote it down and asked me what would happen if I did X. I replied with my answer--let's call it A. Then he asked me how A compared with the conditions I had established for the solution of the problem. I replied that it did not meet them. MacGregor told me that I'd have to think of another. I came up with Y, which I said would yield result B, and this still fell short of the solution conditions. After more prodding from MacGregor, I came up with Z, which I said would have C as a result; although this clearly came a lot closer to the conditions I had established for the solution than any of the others I'd suggested, it still did not satisfy all of them. MacGregor then asked me if I could combine any of the approaches I'd suggested. I replied I could do X and Z and then saw that the resultant A plus C would indeed satisfy all the solution conditions I had set up previously. When I thanked MacGregor, he replied, 'What for? Get the hell out of my office; you could have done that bit of problem solving perfectly well without wasting my time. Next time you really can't solve a problem on your own, ask the Thursday man and tell me about it at the Thursday meeting."

I asked Johnson about Mr. MacGregor's reference to the Thursday man.

"He's the guy who runs the Thursday meeting when MacGregor is away from the plant. I'm the Thursday man now. My predecessor left here about two months ago."

"Where did he go? Did he quit the company?" I asked.

"God, no. He got a refinery of his own. That's what happens to a lot of Thursday men. After the kind of experience we get coping with everyone's problems and MacGregor's refusal to do what he perceives as his subordinates' work, we don't need an operating superior anymore and we're ready for our own refineries. Incidentally, most of the people at our level have adopted MacGregor's managerial method in dealing with the foremen who report to us and we are reaping the same kinds of benefits that he does. The foremen are a lot more self-reliant, and we don't have to do their work for them."

I went back to see MacGregor. His secretary was still knitting. The garment she was working on was considerably more advanced than it was on my first visit. She motions me into MacGregor's office with her head, again not dropping a stitch. MacGregor was in his traditional office posture, looking vacantly out of the window. He turned and asked, "Well, now do you believe that I don't make any decision?"

I said, "No, that could have been just a fluke." He suggested I see another subordinate and asked me to pick another name from the list. I picked Peterson who, when phoned to see whether he was available, said that he had nothing to do. So I went to Peterson's office.

Peterson was in his late twenties. He asked me what I thought of MacGregor. I said I found him most unusual. Peterson replied, "Yes, he's a piece of work." Peterson's story paralleled Johnson's. MacGregor refused to make decisions related to the work of his subordinates. When Peterson got into a situation he could not deal with, he said he called one of the other supervisors, usually Johnson, and together they worked it out. At the Thursday meetings, he reported on the decision and gave credit to his helper. "If I hadn't," he added, "I probably wouldn't get help from that quarter again."

In reply to a query on what the Thursday meetings were like, he said, 'Well, we all sit around that big conference table in MacGregor's office. He sits at the head like a thinned-down Buddha, and we go around the table talking about the decisions we've made and, if we got help, who helped us. The other supervisors occasionally make comments-- especially if the particular decision being discussed was like one they had had to make themselves at some point or if it had some direct effect on their own operations." MacGregor had said very little at these past few meetings, according to Peterson, but he did pass on any new developments that he heard about at the head office.

By the time I had finished with Johnson and Peterson, it was time for lunch. I decided I'd go downtown and stop in at the head office to try to find out their assessment of MacGregor and his operation. I visited the operations chief for the corporation. I had wanted to thank him for his willingness to go along with my study, anyway. When I told him I had met MacGregor, his immediate response was, "Isn't he a piece of work?" I muttered something about having heard that comment before and asked him about the efficiency of MacGregor's operation in comparison with that of other refineries in the corporation. His

response was instantaneous, "Oh, MacGregor has by far the most efficient producing unit."

"Is that because he has the newest equipment?" I asked.

"No. As a matter of fact he has the oldest in the corporation. His was the first refinery we built."

"Does MacGregor have a lot of turnover among his subordinates?"

"A great deal," he replied.

Thinking I had found a chink in the MacGregor armor, I asked, "What happens to them; can't they take his system?"

"On the contrary," said the operations chief. "Most of them go on to assignments as refinery managers. After all, under MacGregor's method of supervision, they are used to working on their own."

"How do they run their own operations-- like MacGregor's?" I asked.

"You guessed it. More and more of our operations are using his system."

I went back to the refinery with a few last questions for MacGregor. His secretary had made considerable progress on her knitting and her boss had resumed his position by the refinery window.

"I understand you were downtown. What did they tell you about this place?"

"You know damn well what they said--that you have the most efficient operation in the corporation."

"Yup, it's true," he replied, with no pretense at false modesty. "Periodically, I get chances to go to work for another major oil company--but I've gotten things so well organized here that I really don't want to take on a job like the one I faced when I came here five years ago. I guess I'll hang on here until something better comes up."

"Let me ask you a couple of questions about the Thursday meeting," I continued. "First of all, I understand that when you are away, the Thursday man takes over. How do you choose the individual to fill this slot?"

"Oh, that's simple. I just pick the person who is most often referred to as the one my subordinates turn to for help in dealing with their problems. Then I try him out in this assignment while I'm off. It's good training and, if he/she proves up to the task, I know I have someone to propose for any vacancies that may occur at the refinery manager level. The head-office people always contact me for candidates. As a matter of fact, the Thursday man assignment is sought after. My subordinates compete with each other in helping anyone with a problem because they know they'll get credit for their help at the Thursday meeting. You know, another development has been that jobs on the staff of this refinery are highly prized by young people who want to get ahead in the corporation; when junior management positions open up here, there are always so many candidates that I often have a tough time making a choice."

"Sounds logical," I said. "Now let me focus a bit more on your role as refinery manager. You say you don't make decisions. Suppose a subordinate told you at a Thursday meeting about a decision he'd made and you were convinced that it was a mistake. What would you do about it?"

"How much would the mistake cost me?"

"Oh, I don't know," I answered.

"Can't tell you then. It would depend on how much it would cost."

"Say, $3,000," I said.

"That's easy; I'd let him make it," said MacGregor. I sensed I'd hit the upper limit before MacGregor either would have moved in himself or, more likely, would have suggested that the subordinate discuss it with the Thursday man and then report back to him on their joint decision.

"When was the last time you let a subordinate make a mistake of that magnitude?" I asked skeptically.

"About four weeks ago," said MacGregor.

"You let someone who works for you make such a serious mistake? Why did you do that?"

"Three reasons," said MacGregor. "First, I was only 99.44 percent sure it would be a mistake and if it hadn't turned out to be one, I'd have felt pretty foolish. Second, I thought that making a mistake like this one would be such a tremendous learning experience for her that she'd never make another like that one again. I felt it would do her more good than signing her up for most of the management-development courses that are available. Third, this is a profit center. It was early in the budget year and I felt that we could afford it."

"What was the result?" I asked.

"It was a mistake--and I heard about it in short order from the controller downtown by phone." (I realized suddenly that during the whole time I had been in the office, neither MacGregor's phone nor his secretary's had rung.)

"The controller said, MacGregor, how could you let a stupid mistake like that last one slip through?" "What did you say?"

"Well, I figured a good attack is the best defense. I asked him which refinery in the corporation was the most efficient. He replied, 'You know yours is.' That has nothing to do with it. I told him that it had everything to do with it. I added that my people learn from their mistakes and until the rest of the plants in the organization started operating at the same degree of efficiency as this one, I wasn't going to waste my time talking to clerks. Then I hung up."

"What happened?"

"Well, relations were a bit strained for a while--but they know I'm probably the best refinery manager in the business and I can get another job anytime, so it blew over pretty quickly," he said, not without a degree of self-satisfaction.

Peterson told me you have quite a control system here. How does it work?" I asked.

"Very simply," said MacGregor. "On Wednesdays at 2:00 p.m. my subordinates and I get the printout from the computer, which shows the production supervisors their output against quota and the maintenance superintendent his costs to date against the budget. If there is an unfavorable gap between the two, they call me about 3:00 p.m. and the conversation goes something like this: "Mr. MacGregor, I know I have a problem and this is what I'm going to do about it." If their solution will work, I tell them to go ahead. If not, I tell them so and then they go and work on it some more and then call back. If the new one will work, I tell them to go ahead with it. If not, I suggest they get in touch with one of the other supervisors, work it out together, and then call me and tell me how they are going to deal with it. If that doesn't work, I refer them to the Thursday man. That way, I don't get involved in making operating decisions.

"I used to have a smaller refinery than this one where I found myself frantically busy all the time-- answering the phone constantly and continually doing my subordinates' problem solving for them. They were always more than willing to let me do their work because it was easier than doing it themselves and also because, if the solution did not work out, then I was to blame. Can't fault them for trying that. But when I came here, I resolved to get myself out of that kind of rat race and set about designing this system. I worked out

a computer-based production control system in conjunction with a set of quotas I negotiate each year with each of my operating people and a cost budget with the maintenance superintendent. Then I arranged for Wednesday reports. Sometimesit takes a bit of time to renegotiate these quotas--and I've been known to use peer pressure to get them to a reasonable level--but these performance objectives really have to be accepted by the individual before they have any legitimacy or motivational value for him/her. I chose Wednesday because if a problem did develop, I'd still have time to act on my own if my subordinates couldn't come up with a solution. You see, our production week ends Saturday night. I don't want my head to fall in the basket because of their inability to make good decisions, so I minimized the risk this way."

"I can't even remember when I've had to get directly involved myself with their work. I do a lot of reading related to my work. That's why, when they call me with solutions, I can usually tell accurately whether or not their proposals are going to work out. That's my job as I see it--not doing subordinates' work but, rather, exercising supervision. A lot of managers feel that they have to keep proving to their people that they know more about their subordinates' jobs than the subordinates themselves by doing their work for them. I refuse to do that anymore."

"Is there anything else you do?" I asked.

"Well, I look after community relations. One more thing--I work on these." He stepped over to the engineer's file cabinet in the corner of his office. "In here are staffing and equipment tables for this plant at five levels of production--at one-year, two-year,

five-year, and ten-year intervals. If I get a phone call from the head office and they ask me what it would take to increase production by 20 percent, I ask over what period; if they say, for example, five years, I just read off the equipment and the personnel that would be needed. That's what I see as being an upper level manager's job. As I recall, the management author Peter Drucker once said that managers get paid for the futurity and irreversibility of the decisions they make. Well, these sort of decisions are way in the future and are terribly difficult and expensive to reverse once they are embarked on. Too many managers say they have no time to plan--yet that's what they are being paid to do, not to do their subordinates' work. Not me. I plan, listen to Wednesday reports and Thursday decisions, and play golf."

"Do your subordinates help you make these planning decisions?" I asked.

"No," said MacGregor. "They gather some of the information and I show them how I go about making up the plans. They all know how to do it after they've been here a couple of years. The actual decisions, though, are made by me. If they are wrong, I have to take the blame--and if they are right," he said with a smile, "I take the credit. Now, I have a most important golf game scheduled. If you have any further questions, just come in any time except Thursday between 10:00 a.m. and noon. I don't have much to do except to talk to visitors."

As I drove back home, I started to think about the MacGregor approach to management. Did MacGregor use job enrichment? Yes, his subordinates were motivated by their jobs themselves. Did MacGregor train his subordinates? Evidently - because they seem to be

constantly in line for promotion. And there was certainly no doubt about the efficiency of his operation. No question about it: MacGregor was a well- organized manager who still had enough time to work on his golf game.

MACGREGOR EPILOGUE

It is clear that MacGregor had several things going for him that helped make his system effective. Not the least of these was that he had very precise measures of the output of each of his subordinates--barrels of product or performance against budget. It is also true that he was in charge of a profit center and that his own performance was appraised over a time span sufficiently long for him to offset short-term diminished performance with long-term results. Further, MacGregor's responsibilities were confined to production; he did not have to contend with marketing problems. His job was merely to deliver a line of products in the quantities called for at minimum cost, by means of production processes that had been well established and understood by those in charge of them. Certainly all these factors helped MacGregor run his operation the way he did and there is no doubt that as his reputation became established, his superiors gave him a freer hand. But to explain MacGregor in terms of a fit between his leadership style and the nature of his responsibilities is to deny what he tells us about how the really effective manager performs his functions.

MacGregor's overriding concern was with results: the results his subordinates achieved through methods they developed either by themselves or by working with their peers. He simply refused to do their work for them, even at the risk of incurring short-run costs.

By refusing, he enabled them to grow in terms of their ability to make decisions even under conditions of uncertainty. MacGregor's contact with his subordinates centered on the negotiation of performance standards and the receipt of progress reports on the results they were achieving. When their performance fell short of these standards, he saw his role as one of reminding them that they had a problem and he was interested in hearing how they were going to deal with it. If they could not solve it themselves (and he was confident that he was technically able to assess the likelihood that their solution would be successful), he referred them to one of their peers. He would not permit them to become dependent on him as the ultimate problem solver--ever ready to prove his technical proficiency and perfectly willing to be Big Daddy to subordinates in distress. For MacGregor, each problem encountered by his subordinates represented a self-teaching opportunity. He recognized that he was ultimately responsible for finding the right answer to the problem, but not for formulating its solution, and that for him to become involved in his subordinates' responsibilities was to assume part of the burden that was appropriately their own. Perhaps even more important, doing so would be to deny them the chance to develop their own problem-solving abilities. This refusal to involve himself in their activities afforded him the opportunity to fulfill the planning obligations inherent in higher level management assignments.

Essential to MacGregor's system of management was a team of subordinates highly committed to their job objectives. This commitment was achieved by negotiation of the specific results each was to accomplish, and these negotiations continued until both sides were satisfied that they were realistic and attainable. When a subordinate suggested unrealistic objectives, on either the low or the high side, they were modified through

open discussion with a willingness on both sides to adjust previously held positions. In all cases, MacGregor left specifics on how agreed-upon results were to be achieved to the subordinates themselves. By insisting that he be informed on how decisions were actually made, including who helped in the process, MacGregor not only ensured that his subordinates helped each other, but also received the information that he needed to make valid judgments on how well each of them was developing in his job.

Because of the record his subordinates achieved in receiving promotions to the position of refinery manager, MacGregor had no trouble attracting highly capable candidates for managerial jobs in his refinery. Once on his staff, managers recognized that the way to become a Thursday man was through a combination of high performance and an ability to work with peers in a way that enabled them to solve their own problems and reach their own objectives.

MacGregor was unique among the managers I interviewed in the course of my study. Presumably his approach was a distinct possibility for each of the nine refinery managers I talked to, and certainly with adaptions it could have been used by many of the 100 executives I interviewed--but it wasn't. He had taken management by objectives to its logical limits by concentrating his efforts on formulating and negotiating objectives and had divorced himself from direct involvement in solving problems his subordinates came upon in carrying out their responsibilities.

MacGregor's frequency of regularly scheduled meetings with his subordinates was typical of the managers interviewed in the study: 10 percent met less frequently and about 5

percent more often. But his focus on discussion of complete decisions was unique. Slightly less than three-quarters of the executives with whom I talked saw the purpose of their meetings as a combination of information communication and problem solving; the balance was split evenly between a primary focus on communication of information and a primary emphasis on problem solving. Interestingly, the majority of those who emphasized problem solving were refinery executives.

When describing the degree of reliance they placed on the contributions made by subordinates in the determination of final decisions, half of the managers felt that it was considerable, a quarter that it was heavy, and the balance that it was either not too significant or that it varied with the individuals involved. Only MacGregor left the actual decision making (except in rare circumstances) to the subordinates themselves.

All the managers, except MacGregor, either stated explicitly or made it clear during the course of the interviews that all important decisions arrived at in these meetings were made by themselves. They received suggestions, considered their sources, and either compared the proffered solutions with solutions they had developed on their own, or considered them carefully before reaching a final solution. In using this approach to group decision making, the managers were obviously manifesting their deeply held convictions that one of the key responsibilities of an upper level executive is to act as chief decision maker for those who report to him. They believed that, after all, the superior is ultimately responsible for the quality of the decisions made in his organization and the only way to carry out this task is to become directly involved in the decision-making process itself.

Most of the managers I have encountered--both organizational superiors and outside managers involved in the studies I've conducted or the consulting assignments I've carried out--pride themselves on the extent to which they invite their subordinates to participate in organizational decision making, but their perceptions of this process and its organizational impact often differ sharply from those of the subordinates involved. For many of the latter, the participative management routine is just that--a routine acted out by the boss because it evidences his espousal of a technique that is supposed to increase the likelihood that subordinates will accept and commit themselves to decisions; he may even believe the decisions were jointly determined. However, most participative management is, in fact, a fiction. Under these conditions, participative management is seen by lower level participants as, at worst, a manipulative device and, at best, an opportunity for them to avoid decision-making responsibility and assure that if a wrong solution is reached, the boss himself was a party to the decision.

MacGregor avoided this trap by refusing to give managers reporting to him the opportunity to second- guess the solution he would be most likely to choose. Although he allowed himself some margin in case emergency action on his part should become inevitable, he made it clear that he wanted to hear about problems only after they had been solved and about decisions only after they had been made.

The job of refinery manager falls between that of chief executive (responsibility for all aspects of the operation and profit accountability) and that of production manager (only indirect concern for the integration of such functions as finance, accounting, marketing, and so on). Mintzberg points out that production managers give greatest attention to

decisional roles, especially those of disturbance handler and negotiator. MacGregor, by contrast, minimized his role as disturbance handler but did put a lot of time, energy, and effort into negotiating objectives with his subordinates, rather than laying them on his people and then selling them on the reasonableness of his decisions. He also worked constantly to improve his unit, to adapt it to changing environmental conditions, and to allocate present and potential organizational resources for optimal present and future effectiveness. In his interpersonal role MacGregor was readily available for figurehead and liaison activities, and his program for subordinate self- development attracted enough attention within the corporation to ensure a supply of highly motivated subordinates.

In his informational role, MacGregor monitored the output of the management information system he had devised, but he did so after the same information had been reviewed by his subordinates. The dissemination function was partly achieved by the management information system and partly through the joint review of managerial decisions conducted at the Thursday morning meetings. As spokesman for his unit, he was easily accessible to individuals inside and outside the corporation.

What sets MacGregor apart from other managers is that he had consciously thought out his role as an upper level administrator. He did not blindly adopt the methods of his predecessor; neither did he merely adapt a modus operandi he had previously found reasonably successful to the greater demands of running a larger unit. Rather, MacGregor reflected on what the key responsibilities of the executive in charge of a large operating facility really are and concluded that they involve being well informed on changes occurring in the environment that might have an impact on his operation and determining

how best to adjust operations to benefit from these changes. At the same time, MacGregor recognized that profitable operations must be carried out in the here-and-now and that a supply of qualified subordinates must be developed for the future.

He concluded that his time was the scarce commodity and he threw himself into the design and implementation of a managerial system that had as its hallmarks self-development for his subordinates, an efficient operation for his employer, and time for himself to actively consider the impact of future developments on his unit. His wise investment of that scarce commodity, his own time, in designing an effective management system paid an extra dividend--surplus time for recreational pursuits.

Initial Contact with MacGregor

- "I have nothing on the books except to play golf and see you."

- "I don't make their decisions for them, I just don't believe in participating in the decisions they should be making. I used to make all the operating decisions myself, but I quit doing that a few years ago."

- "Good, that's what you are being paid to do, solve problems, and <u>he hung up</u>."

What did you learn about MacGregor's approach to management from this interaction?

Study Questions: MacGregor Case

Feedback from subordinates - Johnson

- "The man is a piece of work"

- "He simply decided not to get involved in decisions his subordinates are being paid to make."

> Question – Had Johnson ever tried to get MacGregor to make a decision for him?

- "He asked me what the problem was. And then he asked me what the conditions for its solution were."

- "Next time you can't solve a problem on your own ask the Thursday man and tell me about it at the Thursday meeting."

Study Questions: MacGregor Case

Corporate Feedback

- "Isn't he a piece of work?"

- "MacGregor has by far the most efficient unit. And he has the oldest equipment in the company."

- "Does MacGregor have a lot of turnover? A great deal. Most of them go on to assignments as refinery managers. After all, under MacGregor's method of supervision, they are used to working on their own.

- "My subordinates compete with each other in helping anyone with a problem because they know they'll get credit for their help at the Thursday Meeting."

Study Questions: MacGregor Case

Thursday Meetings

- "We go around the table talking about the decisions we've made and, if we got help, who helped us."

- "The other guys occasionally make comments, especially if the particular decision being discussed was like one they had to make…"

- "My subordinates compete with each other in helping anyone with a problem because they know they'll get credit for their help at the Thursday Meeting."

- "MacGregor had very little to say at these meetings…"

Study Questions: MacGregor Case
Thursday Meetings

Why? What was he observing/learning?

By insisting that he be informed on how decisions were made, including who helped in the process, he was able to judge how well each subordinate was developing on the job.

And he was getting briefed on the details of the operation "Management by Wondering Around" without having to do the wondering!

Study Questions: MacGregor Case

Thursday Man

- "I pick the man who is the most often referred to as the one my subordinates turn to for help in dealing with their problems."

- "He's the guy who runs the Thursday meetings when MacGregor is away from the plant."

- "The Thursday man assignment is sought after."

What happens to most Thursday men?

Study Questions: MacGregor Case

Wednesday Reports

- 2:00 - Output against quota <u>and</u> costs to date against budget reports

- 3:00 – If there is an issue, "Mr. MacGregor, I know I have a problem and this is what I'm going to do about it."

- If the solution will work, MacGregor authorizes action, if not – try again. If they get stuck, go to Thursday man.

Why is MacGregor so certain that a proposed solution will or won't work?

Attitude Toward Mistakes

- "How much would the mistake cost me?"
- $3,000 – "I'd let him make it."
- Why would you let an employee make a serious mistake?"

    - I was only 99.44% sure it was a mistake
    - Learning experience for employee
    - This is a profit center – It was early in the budget year and I knew we could afford it!

How do you view MacGregor's attitude toward allowing employees to make mistakes?

MacGregor's System

"I worked out a computer-based production control system in conjunction with a set of quotas I negotiate each year with each of my operating people and a cost budget with the maintenance man. Then I arrange the Wednesday reports. Sometimes it takes a bit of time to negotiate these quotas – and I've been known to use pear pressure to get them to a reasonable level. But these performance objectives really have to be accepted by the individual before they have any legitimacy or motivational value."

Importance of Planning

- Peter Drucker "managers get paid for the **futurity** and **irreversibility** of the decisions they make."

- "Too many managers say they don't have time to plan, yet **that's what they are being paid to do**, not to do their subordinates work."

- "I plan, listen to Wednesday reports and Thursday decisions, and play golf!"

Three Key Roles of Management
(How would you grade MacGregor?)

- Be well informed of relevant changes occurring in the environment and determine how to best adjust the organization to benefit from these changes - <u>developing alternate plans</u>.

- Be certain your organization is, in the here-and-now, providing efficient and effective goods/services - <u>fulfilling mission</u>.

- Provide a supply of qualified subordinates for the future - <u>staff development</u>.

Grade MacGregor's Management Skill by these Measures?

- **Job Enrichment** – employees were highly motivated by their jobs

- **Training Subordinates** – employees were constantly in line for promotion

- **Efficiency of Operation** – best in corporation and he was in demand by competitors!

Application to Academia

The key differences in evaluating an organization's success?

- **For profit corporations** – maximizing return to shareholders (profit)

- **Universities** – education, research, service, economic development, knowledge (many metrics with potential conflict between competing metrics)!

Despite the differences, what can be applied to Academia from MacGregor's approach to management?