



*FMI Professional Development Week
Project Costing*

November 19, 2018

2018 FMI Professional Development Week, Ottawa

WELCOME AND INTRODUCTIONS

Welcome and Introduction

Instructors Today



Jennifer Read, PMP, CMC, PEng, PRINCE2

- 16 years of Military experience.
- 16 years experience as private consultant
 - Held many Project Management and Management Consulting roles within Federal Government depts including setting up PMOs, and PM Governance.
- Currently President of PMI OVOC

Welcome and Introduction

Instructors Today



Pete Grieve, PMP

- Worked in most aspects of Software System Development Life Cycle: Dev, BA, Manager of BAs & QAs, Project Mgr, Product Mgr, Engagement Mgr, People Management, and Procurement.
- Has worked both in private and public sectors within banking, insurance, retail, e-commerce, and e-tourism industries.
- Currently on the Board of Directors for PMI OVOC as VP Programs responsible for ongoing professional development education/seminars and the annual Symposium.

“Charlie LaChicken”

Introductions



- Mascot of PMI OVOC training sessions.
- Speciality is Time Management.

Proposed Agenda

- Introduction into various project costing models we have been involved in within our careers (the good/the bad/and the ugly);
- Why I.T. and Finance teams sometimes do not agree on Project Costing approaches; maybe break down barriers from both sides;
- Preceding 2 steps to Project Costing: Scope and Resource Planning;
- Creating the Project Triangle: Time, Scope, Cost; (and the silent 4th one – Quality);
- Plan Cost Management;
- Estimating Costs and Determine Budget (Cost Baseline);

Proposed Agenda(continued)

- Controlling Costs;
- Trends and Emerging Practices in Project Costing.

Case Studies used through-out to illustrate the above points:

1. Software implementation of a new e-commerce program for a major publicly-traded corporation.
2. Building and Move to a new office location.

DISCLAIMER



Disclaimer

- This session is scary for PMs – especially with a room full of Finance experts.

Past Costing Experiences

- **Private Industry (ex. Banks, Insurance Companies)**
 - Projects were not costed out – money was just there. You had “x” resources to do “y” work – figure it out.
 - Problem: No historical data or ROI final data.
 - Initiated by a Case Study of some nature about proposed savings, once granted that was it. Priority was set.
 - Finance not really involved.
 - **Pros/Cons of this Approach?**

Past Costing Experiences

- Some Government (“bucket of money”)
 - Budget determined and granted from a bucket of money not closely watched or monitored.
 - Sometimes a single revenue sources is allocated against 4x the number of expenses.
 - “self-funding” can sometimes stop all inquiries.
 - Growing emphasis on shared programs to reduce over-head and expenses.

Pros/Cons of this Approach.

Past Costing Experiences

- Private Sector – can Over-kill (in some cases)
 - ***** Considered Best Practices**
 - All costing is planned, done – Costing is Baseline.
 - During execution – Project Team members are expected to allocate all their time to a billable client (I.T. shops, lawyers, etc.) vs. non-billable.
 - Many I.T. Services companies talk about Resource Utilization (how much time spent on the bench between billable projects).
 - Numerous PM's agree: Managerial nightmare to get Devs to do up their timesheets properly.
 - **Pros/Cons of this Approach**

Discussion

- What are your backgrounds and participation in projects?

Important Project Elements to Costing

1. Organizational set-up and “things have always been done this way” mentality;
2. Projects vs. Programs/Portfolio Costs:
 - Project Costs – duration of the Project (defined start and end period; costs only associated with delivering the project)
 - Program/Portfolio Costs: Operational (On-going) costs)
 - ** sometimes I.T. /Finance problem area
3. Not bringing in Finance early enough or as a Key Stakeholder (need stronger Finance voices **and participation** to help define benefits).

Important Project Elements to Costing

4. Project Contract – How Written and Need for proper costing:
 - Ex. Time and Material vs. Fixed Pricing
 - Primary vs. Sub Arrangement (how many layers and mark-ups have occurred).

5. Original Quote (to Win Business) vs. Change Requests/Task Authorizations

Steps to a Project – Preceding Steps to Costing

1. Scope – **WHAT** are we trying to build/buy/deliver?

Using our Case Studies:

1. Software Implementation of a new e-commerce program for a major publicly-traded corporation:
 - Probably a website/mobile functionality for customer purchases right from browse to buy capabilities;
 - Probably an inventory/merchandise system – to add/delete products, set pricing/sales, re-order with suppliers?;
 - Probably marketing component – set up campaigns, events?
 - And.....and.....and....

Steps to a Project – Preceding Steps to Costing

1. Scope – **WHAT** are we trying to build/buy/deliver?

Using our Case Studies:

2. **Building and Move to a new Office Location:**
 - Buy Land or Property;
 - Renovate to your Organization's needs (walls, offices, meeting rooms, paint, carpet, lunch/rec areas, reception area, etc.);
 - Buy / re-use equipment
 - Book Moving company to move people/things from old building to new;
 - Possibly re-hab former building for re-sale;
 - And.....and.....and....

Steps to a Project – Preceding Steps to Costing

2. Resources – WHO/WHAT will we need to deliver the Scope?
 - (Resources = People + Equipment + Supplies) + Duration

Using our Case Studies:

1. Software Implementation of a new e-commerce program for a major publicly-traded corporation:
 - Probably a website/mobile functionality for customer purchases right from browse to buy capabilities;
 - **People: PM, 1 Sol. Arch, 4 Devs, 3 QA Testers, 5 Bus. Resources**
 - **Equipment: Servers? Bandwidth? Software licences? Project v.s. Operational costs?**
 - **Other: co-located? Office space? Whiteboards? Conference lines?**
 - Probably an inventory/merchandise system – to add/delete products, set pricing/sales, re-order with suppliers?;
 - Probably marketing component – set up campaigns, events?
 - And.....and.....and....

Steps to a Project – Preceding Steps to Costing

2. Resources – WHO/WHAT will we need to deliver the Scope?
- (Resources = People + Equipment + Supplies) + Duration

Using our Case Studies:

1. Software Implementation of a new e-commerce program for a major publicly-traded corporation:
 - Probably a website/mobile functionality for customer purchases right from browse to buy capabilities;
 - **People: PM for entire 6 months @ 50% effort ,**
 - 1 Sol. Arch (design for 1.5 months).
 - 4 Devs: 1 Sr Dev for 6 months, 2 Int. Devs for 6 mths, 4 mths (respectively), 1 Jr. Dev for 3 mths;
 - 3 QA Testers: 1 Lead for 3 months (Test Case creation, supervision), 2 testers for “x” period (depends if Agile v.s. Waterfall Dev),
 - 5 Bus. Resources: Marketing, Buying, Communications, ... involvement for 6 months: full-time for 1st month, then 20% for remainder of project.

Steps to a Project – Preceding Steps to Costing

2. Resources – WHO/WHAT will we need to deliver the Scope?

– (Resources = People + Equipment + Supplies) + Duration

Using our Case Studies:

2. Building and Move to a new Office Location:

- Buy Land or Property;
 - **People: Appraiser; Real Estate Agent**
- Renovate to your Organization's needs (walls, offices, meeting rooms, paint, carpet, lunch/rec areas, reception area, etc.);
 - **People: Contractor, Architect, PM, Designer, Workers**
 - **Equipment: ??**
 - **Other: Building Permits**
- Buy / re-use equipment
- Book Moving company to move people/things from old building to new;
- Possibly re-hab former building for re-sale;

Steps to a Project – Preceding Steps to Costing

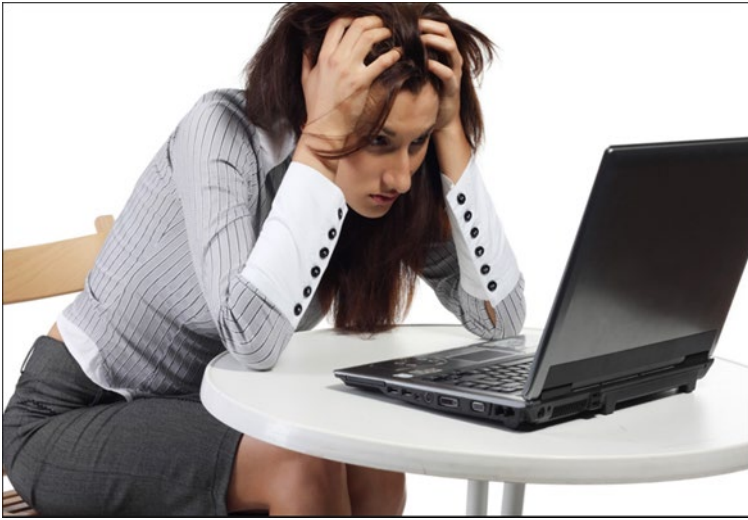
2. Resources – WHO/WHAT will we need to deliver the Scope?
- (Resources = People + Equipment + Supplies) + Duration

Using our Case Studies:

2. Building and Move to a new Office Location:
- Buy Land or Property;
 - People: Appraiser (5 days); Real Estate Agent (2-3 months)
 - Renovate to your Organization's needs (walls, offices, meeting rooms, paint, carpet, lunch/rec areas, reception area, etc.);
 - People: Contractor (6 mths), Architect (2 mths), PM (6 mths @ 50%), Designer (2 Designers for 3 mths), Workers (20 workers: sub-categories: electricians, drywallers, general labour – various lengths (x people, x length – need to map out start/end of jobs)
 - Equipment: ?? (Contingency of \$100k)
 - Other: Building Permits (\$20K)

Exercise

- We are building a Bridge to replace the Ambassador Bridge between Canada and the United States.
 - Take 5 minutes to brainstorm on high-level Scope
 - Take 5 minutes to brainstorm on Resources needed and Duration
 - People, Equipment, Other



The Project Triangle



Plan Cost Management

- Defined in the PMP (Project Management Plan) created at the early stages of the Project life.
 - Describes how the project costs will be planned, structured, and controlled.

The Cost Management Plan can establish:

- Units of Measurement for each resource (staff hours, kms, litres for quantity measures);
- Level of Precision – degree to which cost estimates will be rounded up or down, based on scope of activities and magnitude of the project;
- Level of Accuracy – acceptable range (ex. +/- 10%) and may include an amount for contingencies;

Plan Cost Management

The Cost Management Plan can establish (....continued):

- ❑ Control Thresholds – Variance thresholds for monitoring cost performance and an agreed-upon amount of variance allowed before some action needs to be taken.
- ❑ Rules of Performance measurements: EVM (Earned Value Management) – what method;
- ❑ Reporting Formats. Formats and frequency for various cost reports are defined.
- ❑ Additional Details: ex. Procedure to account for fluctuations in currency exchange rates.

How to Determine Project Costs

- Inputs:
 - Historical Info: Past similar projects + Lessons Learned from past projects
 - Project Schedule (incl. Project Scope)
 - Resource Requirements
 - Risk Register
 - Expert Judgment

How to Determine Project Costs

- Using Our Case Studies:
- Software Project (Simple view):

Task #	Resource	Level	Rate	Work Effort	Total
2.1.1	Project Manager	PM3	\$800 / day	6 mths @ 50%	\$48,000
2.1.2	Sol. Architect	DEV5	\$1,000 / day	45 days	\$45,000
2.1.3.1	Dev Lead	DEV4	\$800 / day	6 mths	\$96,000
2.1.3.2	Int Dev	DEV3	\$650 / day	1 x 4 mths; 1 x 6 mths	\$130,000

How to Determine Project Costs

- Using Our Case Studies:
- Software Project (Complex):

Task #	Resource	Level	Rate	Work Effort	Total	2018-19 Fiscal	2019-20 Fiscal	2020-21 Fiscal
2.1.1	Project Manager	PM3	\$800 / day *	36 mths @ 50%	\$288,000	\$96,000	\$96,000	\$96,000
2.1.2	Sol. Architect	DEV5	\$1,000 / day *	90 days	\$90,000	\$90,000	0	0
2.1.3.1	Dev Lead	DEV4	\$800 / day *	36 mths	\$576,000	\$192,000	\$192,000	\$192,000
2.1.3.2	Int Dev	DEV3	\$650 / day *	1 x 24 mths; 1 x 36 mths	\$780,000	\$312,000	\$312,000	\$156,000

How to Determine Project Costs

- Using Our Case Studies:
- Software Project (Complex): **Baseline Costs**

Task #	Resource	Level	Total	2018-19 Fiscal	2019-20 Fiscal	2020-21 Fiscal
		All	\$2,288,000	\$696,000	\$996,000	\$596,000

How to Determine Project Costs and Funding Needs

- Using Our Case Studies:
- Software Project (Complex):

Task #	Resource	Level	Total	2018-19 Fiscal	2019-20 Fiscal	2020-21 Fiscal
	TOTAL	All	\$2,288,000	\$696,000	\$996,000	\$596,000

- **Sources of Funding ???**
 - Corporate Ask - Budget / Treasury Board / Self-funded
bake sale?



**What Happens
When Reality
Plays Havoc
with Our
Planning ??**



Discussion

- Using Either Example or Your Project Experience – what can go wrong or change in the Project World that could impact Costing?

Need to Adapt

- **Change Requests / Task Authorizations** = new or changed scope/work that needs to be analyzed:
 - Impacts to Scope, Work Efforts / Resources
 - Costs calculated
 - Submitted to Project Steering Committee to either accept or decline.
 - If accepted, implement => change scope, schedule, costs
- **Re-Baseline.** Work Completed to Date not at Targeted Levels – could be poor PM management, weather-related, union strikes, other factors.

Controlling Costs

- Though-out the entire Project duration:
 - PM's asking about work completed, project risks and issues, forecasting, etc.
- **Not One and Done !!!**



Monitoring and Control – Preventing Below from Happening



Things to Take-Away

- Ask How does your Organization do Project Costing now and why?
 - And is it successful?
- Are their Historical Project Records that can be accessed?
- What is the “right size” of Project Costing for your organization?
- How engaged is the Finance Team within the Project cycle: start, through-out, close-out, lessons learned?
- What can be done better?
- Who can Champion this change?

Wrap Up



Wrap Up

Always happy to answer any future questions, we can be reached at:

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