

#12 Project Procurement

PMBOK 5 Ed. – DEI-

Procurement



Acquiring goods and services from an outside source.

It can also called outsourcing or purchasing





Procurement Term

- Suppliers, vendors, contractors, subcontractors, or sellers
- Buyer



Why company choose outsourcing?



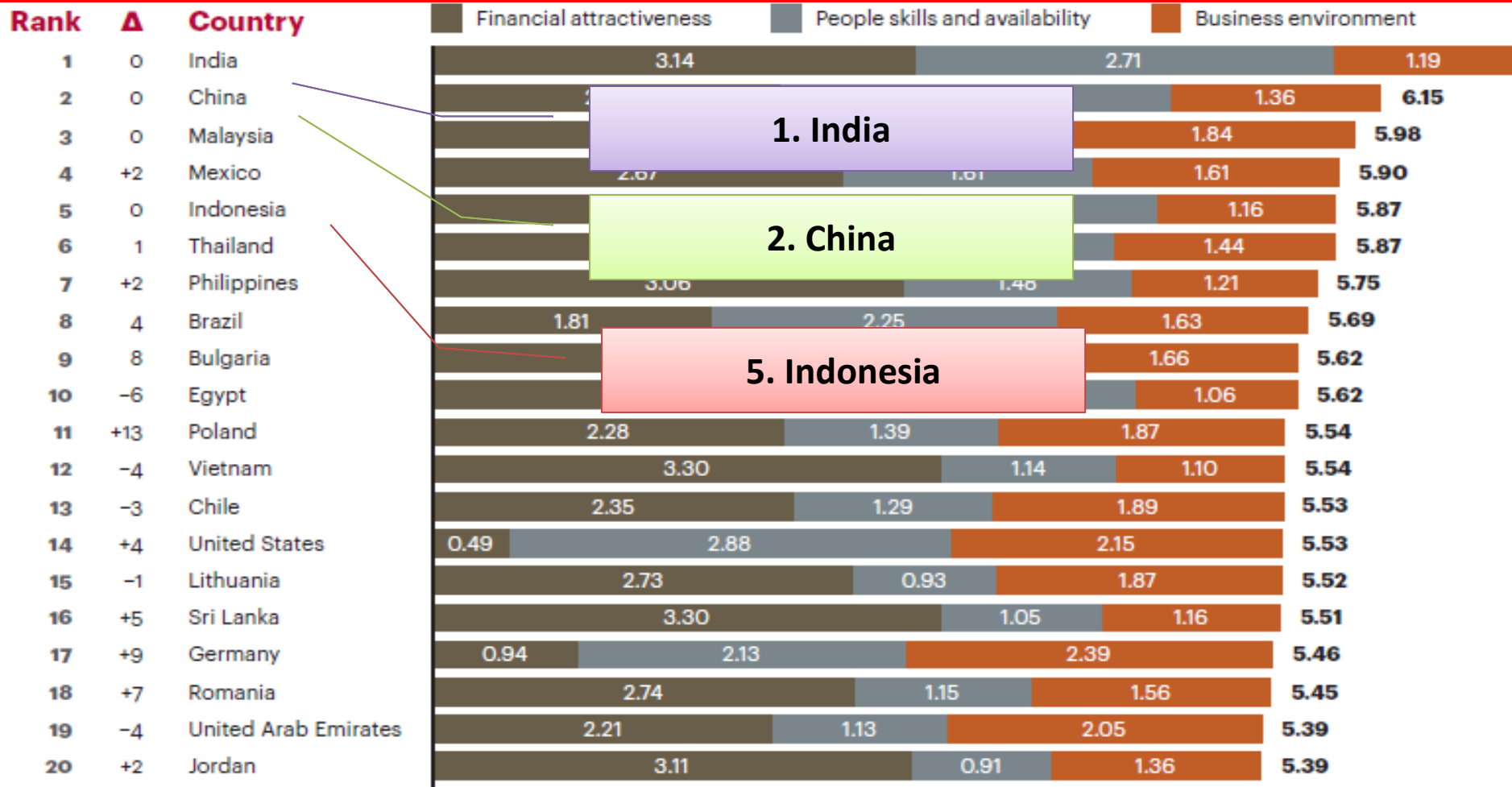
- Cheaper
- Cost saving
- Shortage qualified personal
- Close to the target market



IT Offshoring

- Atlanta-based Delta Air Lines created 1,000 call-center jobs in India in 2003
- **saving \$25 million → cost saving 70-90%**

IT outsourcing destination

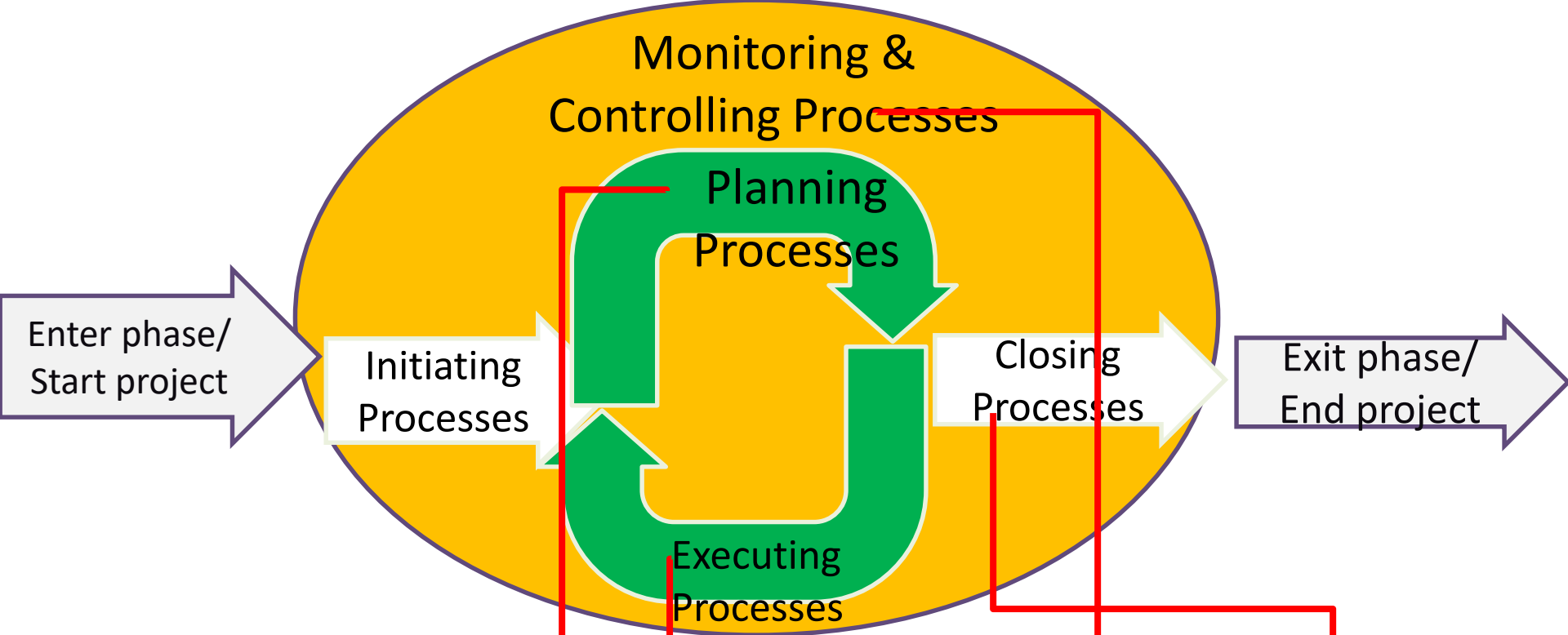


Kearney, 2014



Procurement management

the processes required to acquire goods and services for a project from outside



Knowledge Area	Process				
	Initiating	Planning	Executing	Monitoring & Control	Closing
Procurement		Plan Procurement	Conduct Procurement	Control Procurement	Close Procurement

Procurement Process



Plan Procurement

Conduct Procurement

Control Procurement

Close Procurement



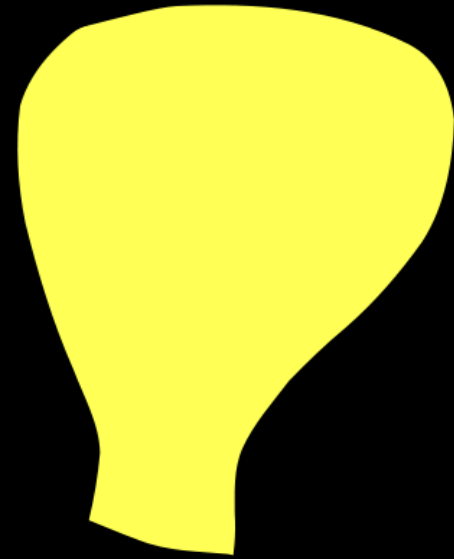
PM Role In Procurement



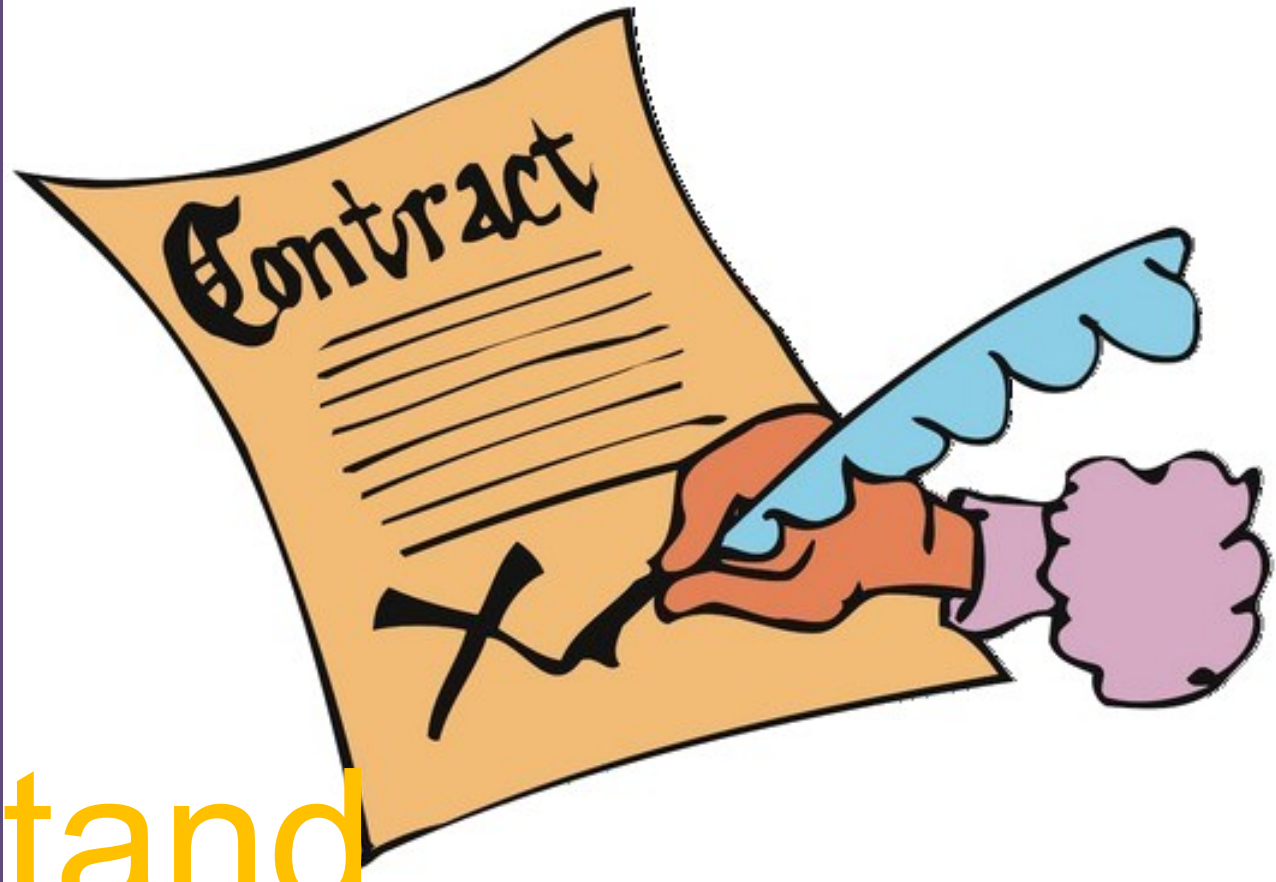
**PM
must be
assigned
before
contract**

#1

Know the
Procurement
process



#2



Understand
contract terms
and conditions

#3

Contain
Project
management
requirement



#4

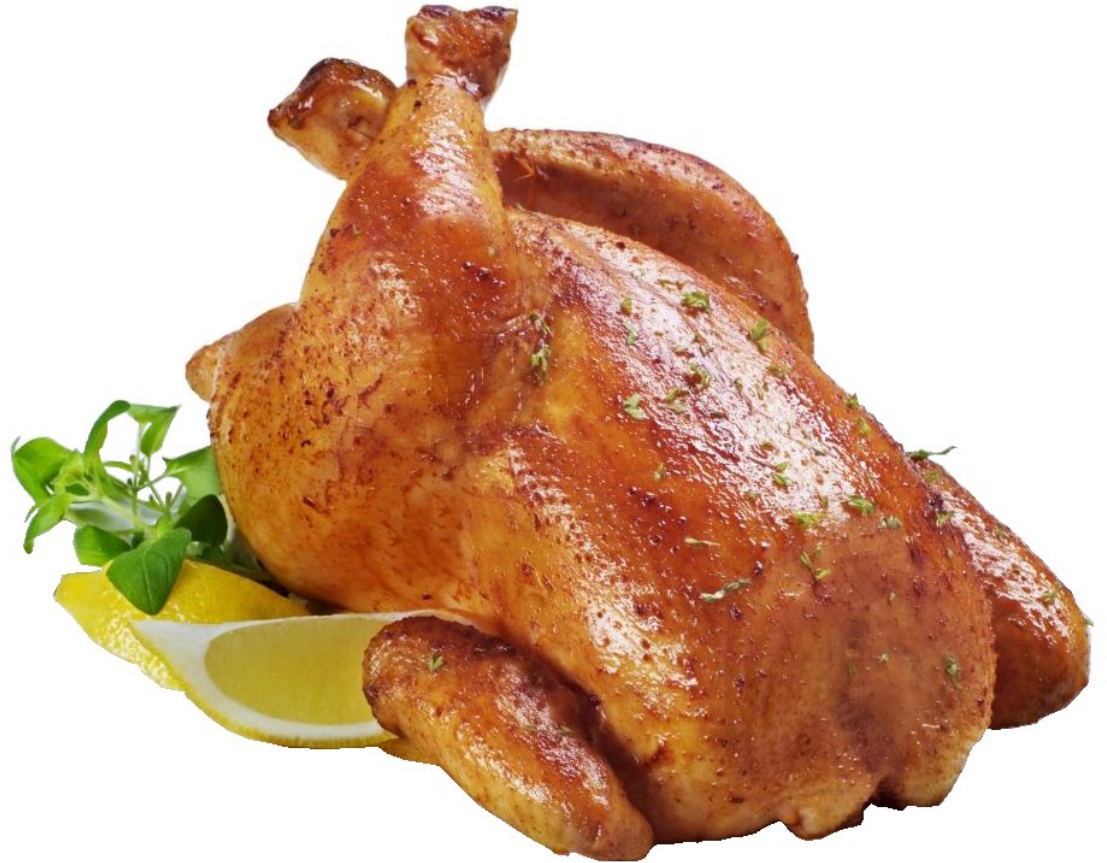
Contain
Risk

management



#5

Tailor
Unique
needs



#6

Align Project Schedule negotiation



#7

Work with
Contract
manager





Plan Procurement

What to outsource, determine the type of contract, and describe the work for potential sellers, create procurement documents

Inputs

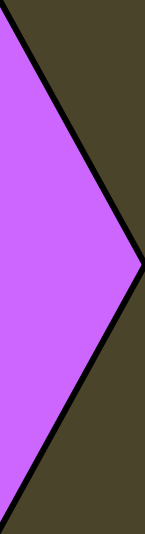
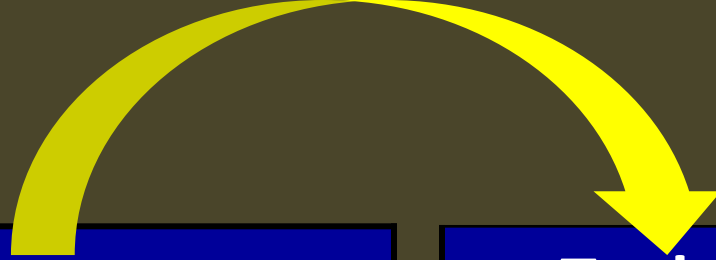
1. Project management plan
2. Requirement documentation
3. Risk register
4. Activity resource requirements
5. Project schedule
6. Activity cost estimates
7. Stakeholder register
8. EEF
9. OPA

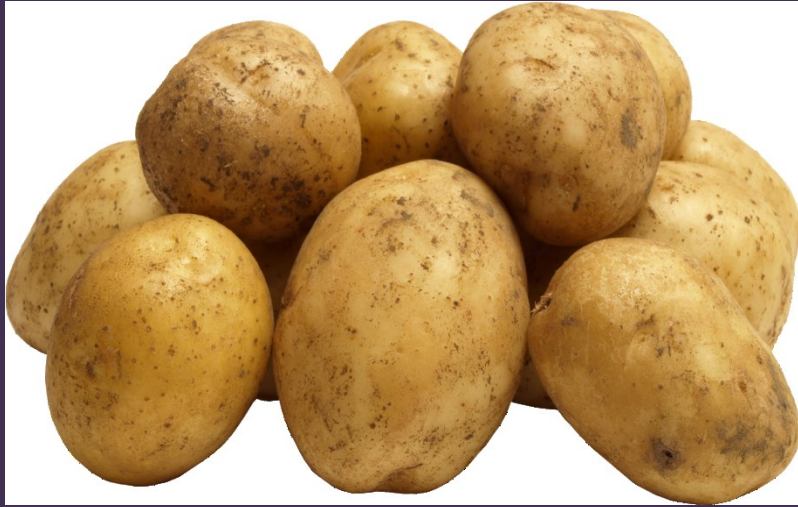
Tools & Techniques

1. Make-or-buy analysis
2. Expert judgment
3. Market research
4. meetings

Outputs

1. Procurement management plan
2. Procurement statement of work
3. Make-or-buy decisions
4. Procurement documents
5. Source selection criteria
6. Change requests
7. Project documents updates





Make or Buy analysis

Choose : make it or **perform** particular product or service by themselves or buy/**acquire** from others.

Make or Buy
analysis
consideration

#1

Skill &
resource



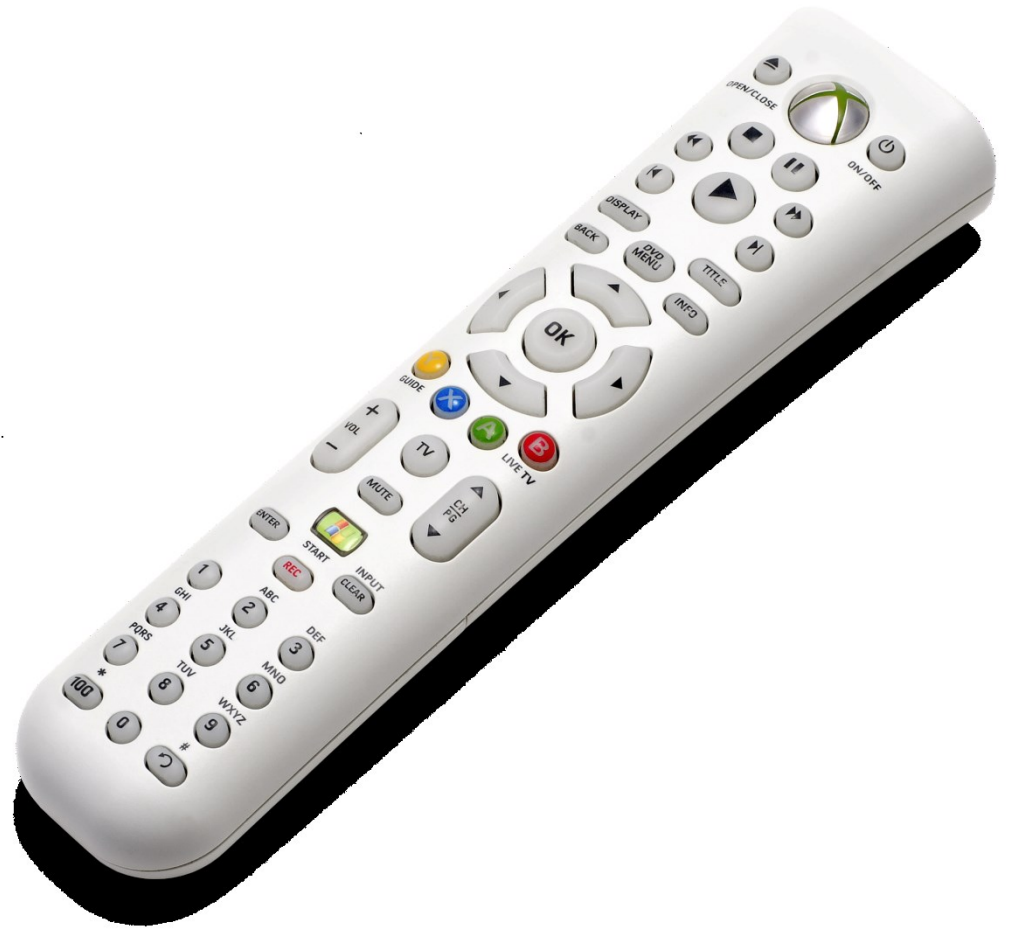
#2

Cost
saving



#3

control



#4



Proprietary
information

Make or Buy analysis

- A project requires a piece of equipment that has a **purchase price of \$12,000** and **daily operating costs of \$400**.
- **Lease** the same piece of equipment for **\$800 per day** (operational included)

$$\text{\$800/day} = \text{\$12,000} + \text{\$400/day}$$

$$\text{\$400/day} = \text{\$12,000}$$

$$\text{Day} = 30$$

< 30 day → leasing

> 30 day → purchasing

Contract Types

A close-up photograph of a person's hands signing a document. The left hand holds a black pen, and the right hand rests on the paper. The background is blurred, showing a person in a white shirt. The text 'Contract Types' is overlaid in a red box at the top. Three yellow boxes with black text are overlaid in the lower half of the image, listing contract types: 'Fix Price Contract', 'Cost Reimbursable', and 'Time & Material'.

Fix Price Contract

Cost Reimbursable

Time & Material



Fix Price Contract

- **“Any cost overruns may not be passed to the buyer”**
- **Sometime more expensive than cost reimbursable**
- **Seller is most concerned with the SOW**

Fix Price Contract



Buyer have experience and know the total price at the project start

- *Seller would need huge amount of reserves*
- Seller can try to increase profit

Fix Price Contract

An illustration of Rosie the Riveter, a symbol of female industrial workers during World War II. She is depicted from the chest up, wearing a blue denim work shirt with a circular emblem on the left shoulder and a red bandana with white polka dots tied around her head. She has a determined expression and is flexing her right bicep.

Fix Price/lumpsum

Fix Price Incentive Fee /FPIF

**Fix Price Economic Price
Adjustment/FPEPA**

Fix Price Contract

- Examples:
 - **FP: Contract** = \$1M
 - **FPIF: Contract** = \$1M + for every month added \$1000 if performance exceed (risk shared)
 - **FPEPA: Contract** = \$1M + additional pricing based on Government Center Bank depreciation rate/exchange rate or interest rate

Cost Reimbursable



Risk on buyer!

Used when **work is uncertain**

Costs cannot be estimated accurately enough



Requires the seller to have an **accounting system** that can track costs

Buyer involvement is very high

Buyer requires auditing seller's invoice

Cost Reimbursable (CR)



**Cost Plus Fee
Cost plus percentage of cost (CPCC)**

**Cost Plus Fixed Fee
Contracts (CPFF).**

**Cost Plus Incentive Fee
Contracts (CPIF).**

**Cost Plus Award Fee
Contracts (CPAF).**

Cost Reimbursable (CR)

- Example:
 - **CPF/CPPC: Contract** = cost + fee (10% of cost)
 - **CPFF: Contract** = cost + \$1K
 - **CPIF**: cost + additional fee based on performance
 - **CPAF**: cost + additional fee bases on manager satisfaction (performance criteria)

Time and Material

**“I have 3 months
and I want my body
back!”**



Time and Material



**“The level of effort
cannot be defined at
the time”**

“Make sure the costs do
not become higher than
budgeted”

Time and Material

“The buyer may put a
“Not to Exceed” and
time limits clause in the
contract.”

Often used for staff
augmentation,
acquisition of experts,
outside support



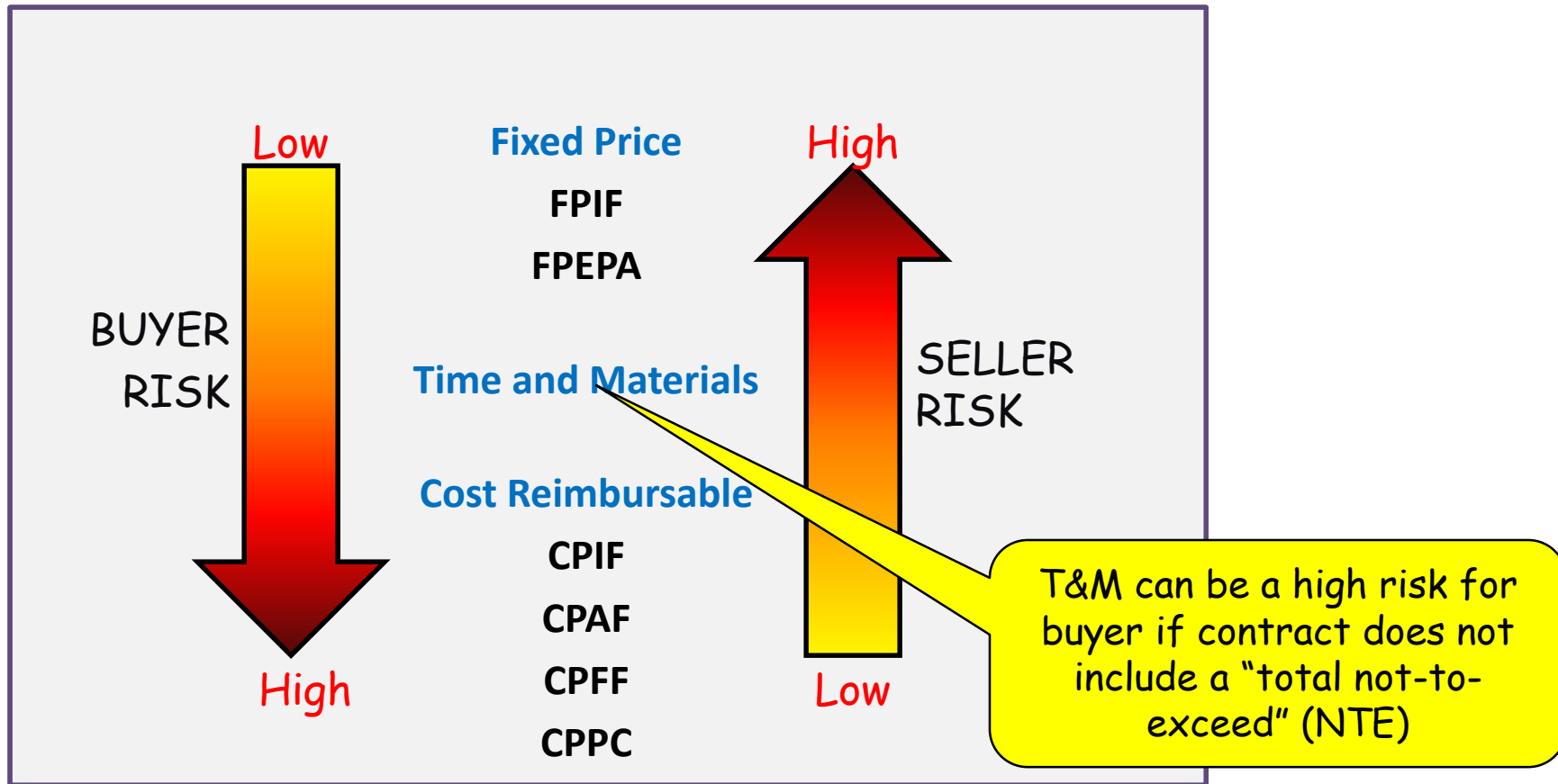
Time and Material

Example:

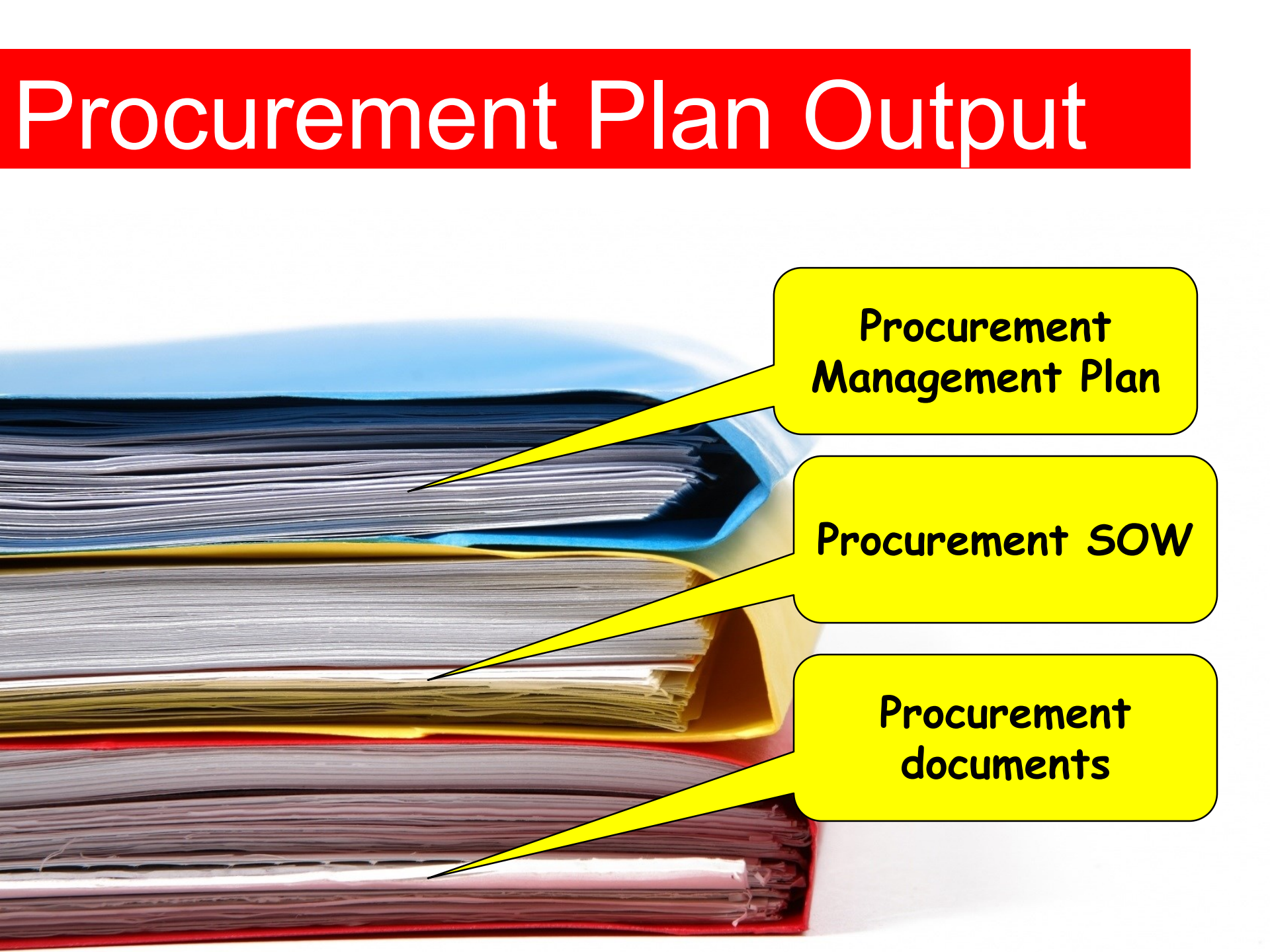
Contract = \$1K per day plus expenses or material cost.

Contract = \$1K per day plus material at \$5 per linear meter of wood.

Types vs. Riskd Material



Procurement Plan Output

A stack of three books is shown. The top book has a blue cover, the middle one has a yellow cover, and the bottom one has a red cover. Three yellow callout boxes with black outlines point to the edges of the books. The top box points to the blue book, the middle box points to the yellow book, and the bottom box points to the red book.

**Procurement
Management Plan**

Procurement SOW

**Procurement
documents**

Procurement Document

- Contact of seller
- SOW
- Terms & condition
- Non disclosure agreement (NDA)

Non Disclosure Agreement



**Confidential /secret disclosure
Work ethic, SOP, proprietary rights**

Do not leak the secret!

Procurement Document

Procurement document	Contract Type
Request For Proposal	CR
Invitation for Bid (IFB)	FP
Request For Quotation (RFQ)	T&M

Letter of Intent (LOI)



It is not a contract, but a letter without legal binding, that says the buyer intends to hire seller.

Privity of contract



**A contractual
relationship**

A → B

B → C

A should talk to
B instead of C



Non Competitive form

**only one seller awarded without a
competitive procurement.**

**Non
Competitive
form**

Seller had patent

**Schedule under
pressure**

Only one seller

**Unique
qualification seller**

**Seller price
reasonable**



There are two
type of non
competitive form

Single source



History

Sole source

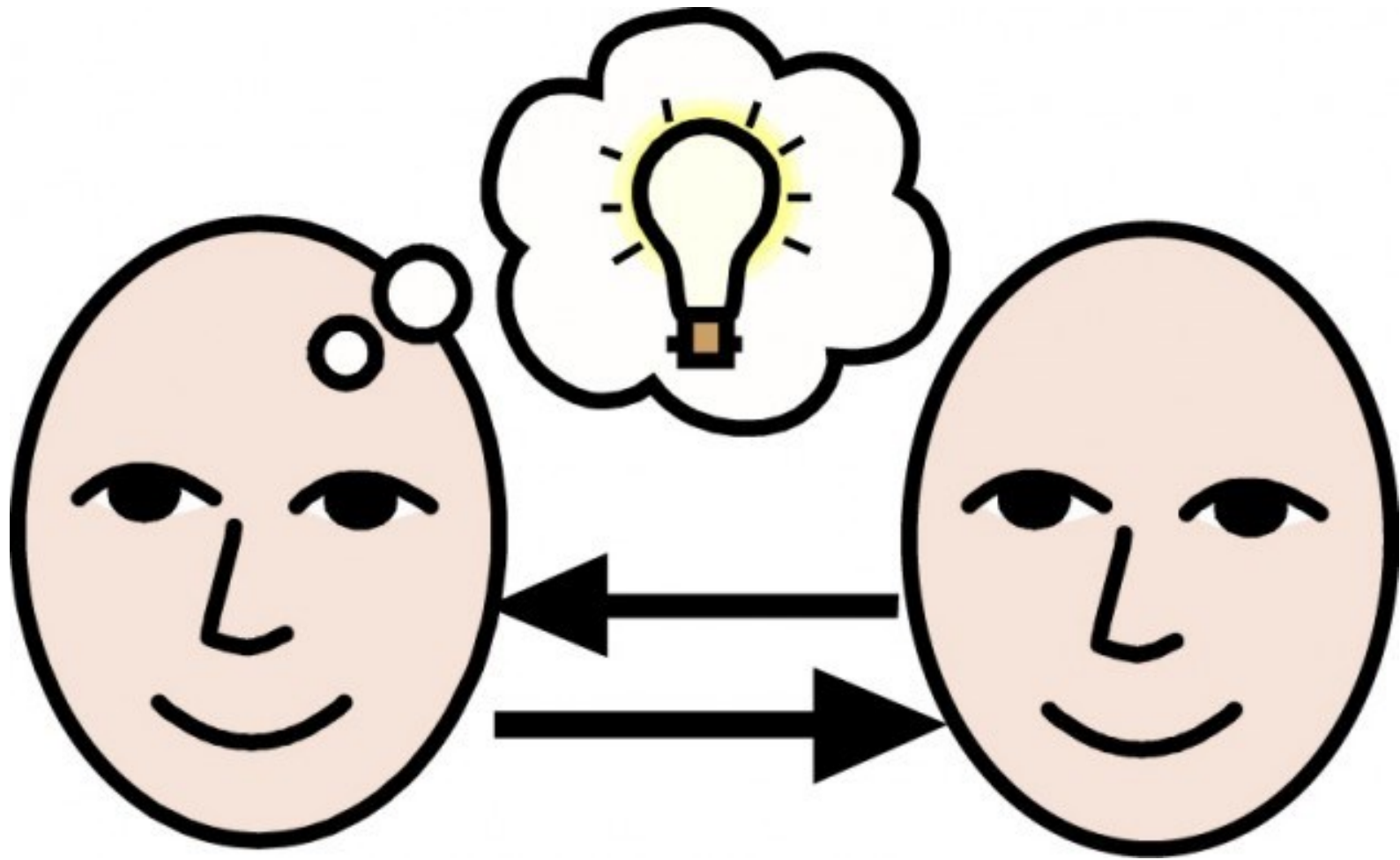


Patent

A close-up photograph of a baby with light brown hair and blue eyes, looking slightly to the left with a grumpy or pouting expression. The baby is wearing a green and white long-sleeved shirt and is holding a small sandcastle in their hands. The background is a blurred beach scene with sand and a light sky.

Source Selection Criteria

The objective is to give fairness competition



Understanding of need



Technical Capability



Past Performance

Project management approach



Financial Stability



Intellectual Property rights

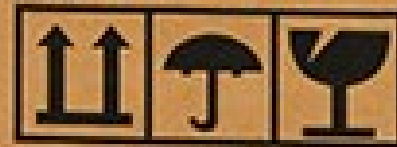


Life Cy





Risk



WARRANTY



References

Important Terms

- **Price** : amount of money that buyer will pay
 - **Profit (fee)**
 - **Cost** : effort to achieve something (monetary terms)
- **Target cost:** (seller perspective) amount of money will be spent
 - **Target price:** (Seller perspective) the expected price

Important Terms

- **Target price:** used to compare **the end result of the project with what was expected** (the target price).
- **Sharing ratio:** **Incentives** take the form of a formula, usually expressed as a ratio, e.g. 90/10 (buyer/seller)
- **Ceiling price:** This is **the highest price** the **buyer will pay**.

Exercise: Contract Calculation for FPIF

- **Ceiling price : 120.000**
- **Target cost : 100.000**
- **Target profit: 10.000**
- **Target price: 110.000**
- **Share ratio: 70/30**

If actual cost = 90.000, then, total price will be = $90.000 + 10.000 + (30\% * (100.000 - 90.000)) = 103.000$

If actual cost = 105.000, then, total price will be = $105.000 + 10.000 = 115.000$

If actual cost = 115.000, then, total price will be = 120.000

If actual cost = 125.000, then, total price will be = 120.000

Exercise: Contract Calculation for FPIF

- **Actual cost < target cost** → seller will get 2 benefits: profit and sharing ratio
- **Target cost < actual cost < target price** → seller only get fix profit
- **Target price < actual cost < ceiling price** → the total price is equal to ceiling price
- **Actual cost > ceiling price** → the total price is equal to ceiling price

Exercise: Contract Calculation for CPCC

- Estimate cost = 100.000
- Agree upon percentage = 10%
- Estimated total price = 110.000
- If the seller increase cost to 110.000 then the total price would be **121.000**

The most undesirable type of contract!

Exercise: Contract Calculation for CPFF

- Estimate cost = 100.000
- Agree upon percentage = 10%=10.000
- Estimated total price= 110.000
- The fee remain = 10.000
- **Total price= 110.000+ 10.000= 120.000**

Exercise: Contract Calculation for CPIF

- Expected cost = 100.000
- Fee to seller = 10.000
- Sharing formula = 85/15
- The final cost (actual cost) = 80.000
- **The seller final reimbursable cost =
80.000 + 10.000 + (15% * 20.000) = 93.000**

Conduct Procurement

“Obtaining seller responses, selecting a seller, and awarding a contract”



Inputs

1. Procurement management plan
2. Procurement documents
3. Source selection criteria
4. Seller proposals
5. Project documents
6. Make-or-buy decisions
7. Procurement statement of works
8. OPA

Tools & Techniques

1. Bidder conferences
2. Proposal evaluation techniques
3. Independent estimates
4. Expert judgment
5. Advertising
6. Analytical technique
7. Procurement negotiations

Outputs

1. Selected sellers
2. agreement
3. Resource calendars
4. Change requests
5. Project management plan updates
6. Project document updates

Proposal Evaluation

10

10

10



Weighting System

criteria	weight	Proposal 1		Proposal 2		Proposal 3	
		Rating	Score	Rating	Score	Rating	Score
technical capability	30%	70	21	60	18	75	22,5
project management approach	30%	80	24	80	24	70	21
experience	20%	50	10	70	14	70	14
price	20%	70	14	70	14	80	16
Total	100%		69		70		73,5

A group of business professionals are seated around a table in a meeting room. A man in the center, wearing a blue shirt, is gesturing with his right hand while speaking. To his left, a woman with long dark hair is looking towards him. In the foreground, the back of a woman's head and shoulders is visible. The background shows a window with blinds. A large, light blue, cloud-shaped graphic is overlaid on the right side of the image, containing the text.

**negotiate
during
procurement?**



Main items to negotiate:

Scope

Schedule

Price & payment

Responsibilities

Authority

Applicable law

Technical & business

management

approaches

Contract financing

CONT

TRACT

**Agreement, MOU,
PO, subcontract**



Purpose of Contract

1. To define role and responsibilities
2. To make things legally binding
3. To mitigate or allocate risks.

A close-up photograph of a person in a grey suit and black tie, holding a black pen in their right hand and a white document in their left. The document is titled "CONTRACT" in large, bold, black letters at the top. Below the title, there are several columns of small, illegible text. The person's hands are positioned as if they are about to sign or review the document. The background is a plain, light-colored surface.

CONTRACT

Items in the Contract



Statement of work



Calendar Baseline



Performance Reporting



Periode of Performance



Roles & Responsibility



Seller place of performance



Pricing method

Payment Terms





Place of delivery



Inspection & Acceptance criteria





Warranty



Force Major Closure

Control Procurement



Managing **procurement relationship**, monitoring **contract performance** and **making change** and corrections as needed.

Tools & Techniques

1. Contract change control system
2. Procurement performance reviews
3. Inspections and audits
4. Performance reporting
5. Payment system
6. Claims administration
7. Records management system

Inputs

1. Procurement documents
2. Project management Plan
3. Agreements
4. Approved change request
5. Work Performance data
6. Work Performance data

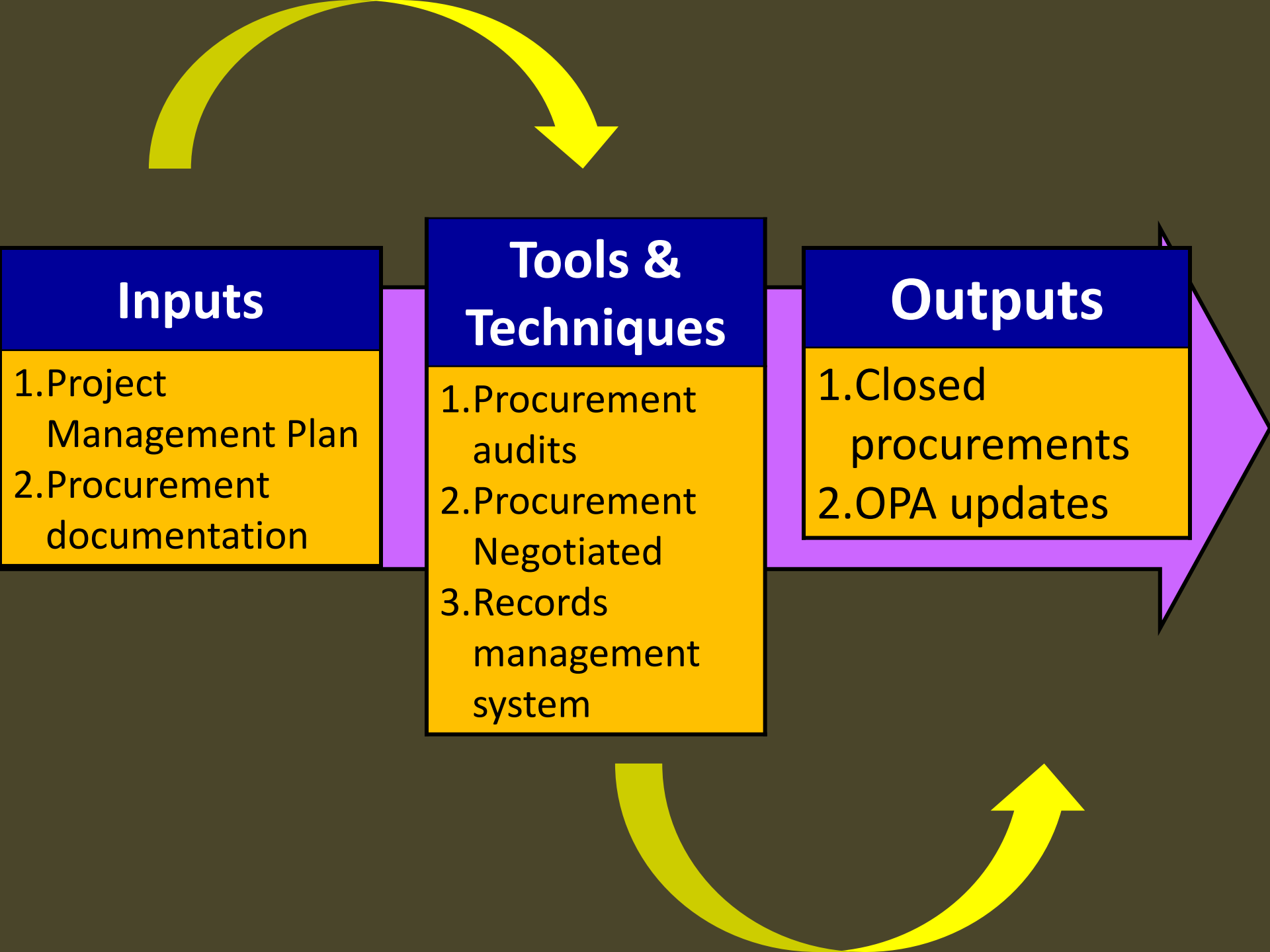
Outputs

1. Work Performance information
2. Project Management plan update
3. OPA updates
4. Change request
5. Project documents updates

A grayscale photograph of a person, likely a runner, celebrating with their arms raised in a 'V' shape. The person is wearing a dark singlet and shorts. The background is a cloudy sky. The image is used as a background for a presentation slide.

Close Procurement

Completing each other procurement





**Conflict
during
procurement?**

Negotiate settlement

negotiate



Arbitration /
mediation (ADR)



Court

