Offshore Testing & ROI
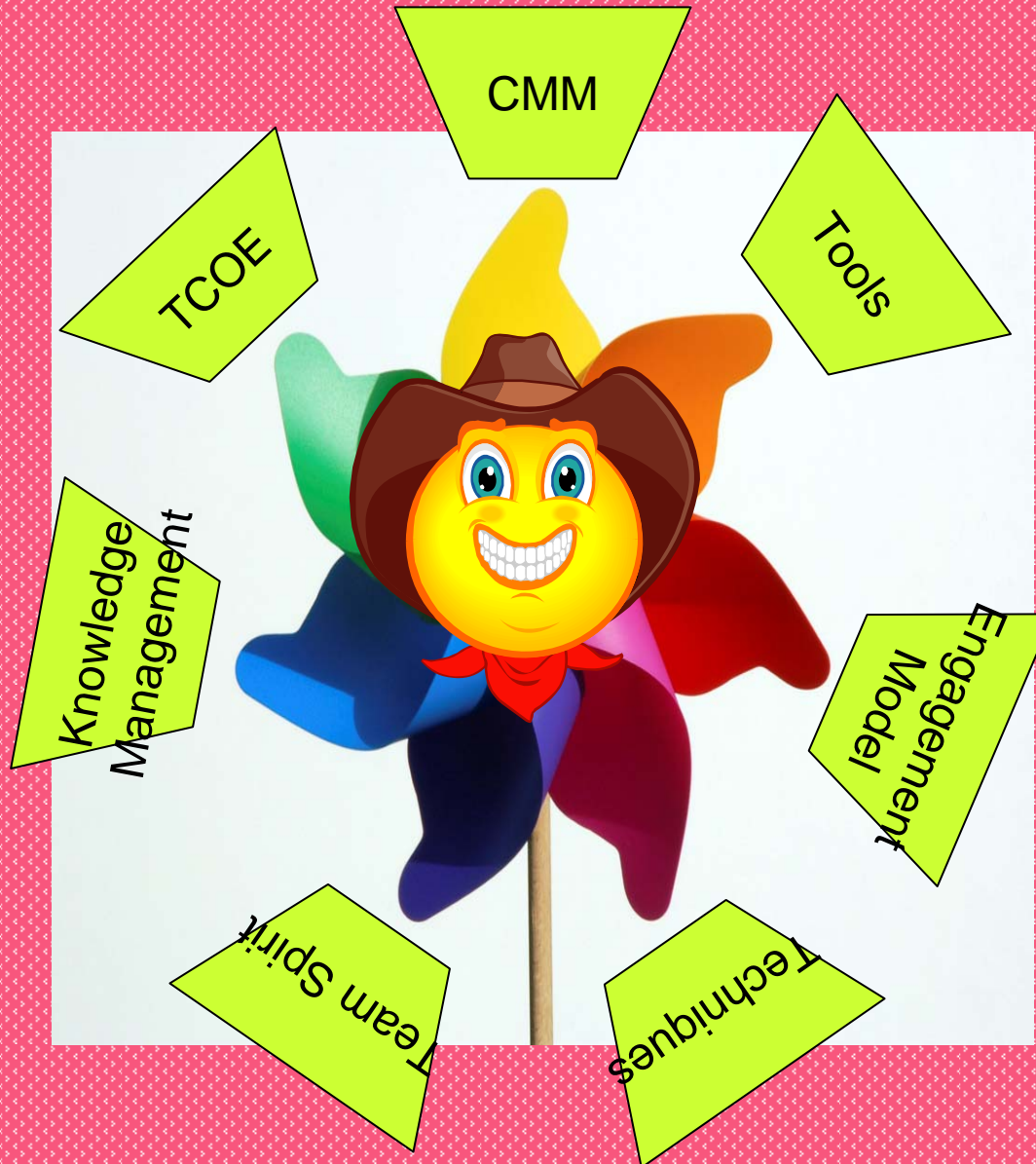
The Pitfalls and Remediation

Vikram Chandna, PMP
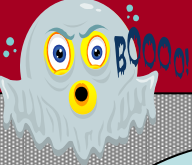
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A Story- Joe, The Tester

CMM

Tools

TCOE

Knowledge Management

Engagement Model

Team Spirit

Techniques

And so it began…

Design CMM level 6?

Demand Self -Healing Applications?

Do nothing?

Join Testers' Trade Union?
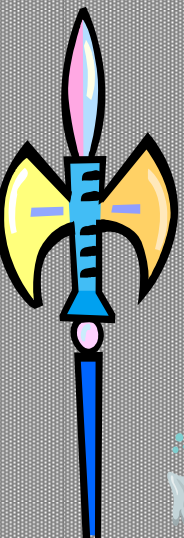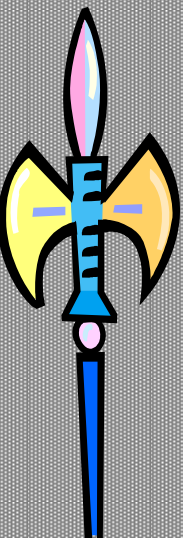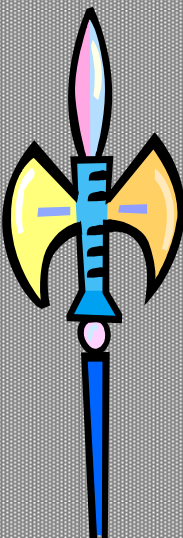
Layout

- Part 1- Background
- Part 2 - Offshore Testing - ROI Computation
- Part 3 - Analysis
- First Q & A session
- Part 4 - Top Pitfalls in Offshore testing contracts
- Part 5 - Contract remediation options
- Part 6 - Analysis
- Second Q & A session

Part 1- Background

Abstract

Ground Situation

- Contract lies at the heart of protecting business value of an engagement and is the most influential factor.
- Majority of offshoring decisions are based on face value of resource rates.

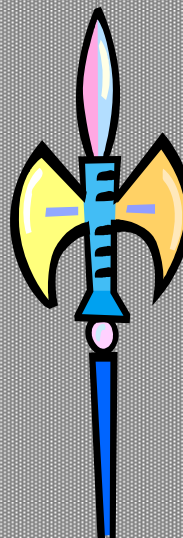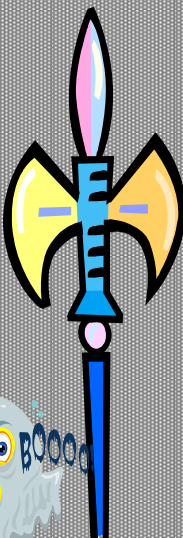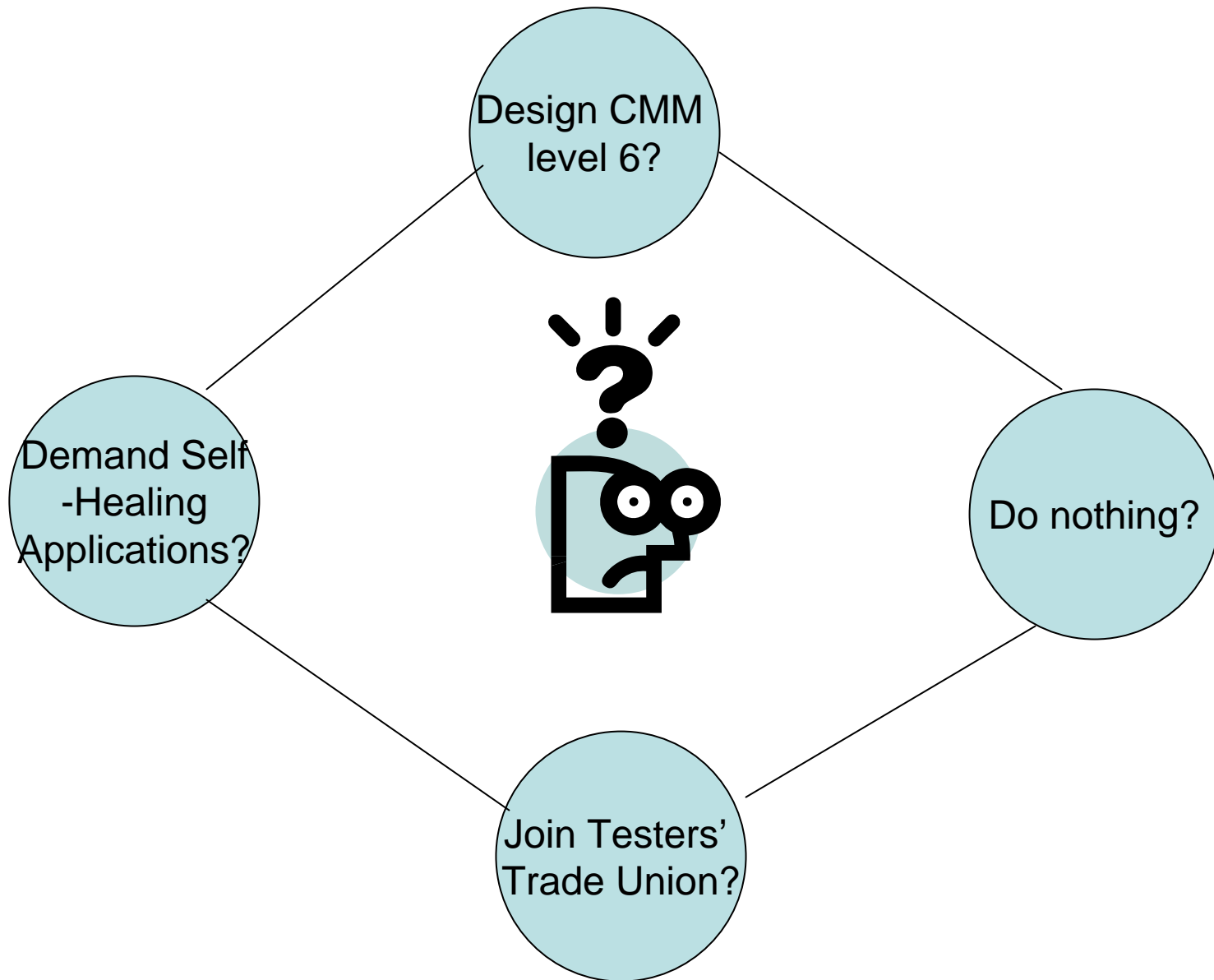| Problem Statement |
| --- |

- Contracts are designed to assure lowest cost per resource for customer and from vendor perspective to maximize it's margin.
- For testing, low cost per se does not assure high ROI
- High ROI is promised during sales pitch. However few contracts, are designed to promote the performance. In fact, they can sometime prove to be a hindrance and lower the ROI on offshore testing.
- To make the matters more complicated, there's no industry consensus around calculating ROI on testing.

Abstract

Solution

Establish ROI on Testing

Construct ROI driven Contract

Output = Business Outcome Driven Testing Engagement

What this Presentation is not about

- A verdict or dialogue on offshoring
- A verdict on state of vendor management
- Calculation of your company's offshore testing ROI
- Taking sides of vendor or client
- Exhaustive analysis of contracts and SLAs

Part 2- Offshore Testing- ROI Computation

Establishing the Returns

- *Returns – Savings on defects prevented from leaking to production.*
- Save on the cost of fixing defect in production which is much higher than cost of fixing cost of fixing defect during testing phase.
- Other returns associated with testing includes customer satisfaction through regular and elaborate reporting, extensive documentation e.t.c.
- Testing function can also yield extra returns by generating ideas around improvement of product design.
- Prevention of defect leakage assigned topmost priority and is used in the balance sheet.
- To be on fair side, business returns and business costs are not considered on either side in the testing balance sheet.
- Type of defect considered in the balance sheet are the ones that business seeks to fix. Eg: Insurance premium value expected versus actual mismatch exceeds 5%.

Establishing the Investment

- Investment covers comprises of resource cost and other costs.
- For the sample balance sheet, a six month project involving two onsite and eight offshore resource is considered.
- The key factor in offshoring engagements is to consider the overheads and as such large number of cost overheads are indentified.
- The cost of fixing defect leaked into production is partially (50%) assigned to testing.

- Time value is not assigned to return or investments.

Testing Balance Sheet

Return				Investment			
Category	Per Unit Return	Quantity	Total in USD	Category	Per Unit Return	Quantity	Total in USD
Savings on cost of fixing defect found in production	$10,000 per defect	100 defects	$1,000,000	Resource cost	$34/hour (blended cost)	10 testers for 6 months	$342,000
				Cost of fixing defects reported during testing	$1500 per defect	100 defects	$150,000
				Defect leakage	$10000 per defect. Charge 50%	10 (at 10% leakage)	$50000
				Rejected Defects analysis	$500 per defect	10 (at 10% rejection)	$10,000

Testing Balance Sheet- Investments…

Category	Per Unit Cost	Quantity	Total in USD
Duplicate defects removal	$100 per defect	5 (at 5% duplication rate)	$500
Issue resolution	$100 per issue	250 issues	$25,000
Deliverable & work review	$100 per day	125 working days	$12,500
Communication overhead	$100 per day	125 days of project	$12,500
Training Cost	$1000 per BA day	10 (BA days)	$10,000
Attrition (ramp-up) Cost	$272 (daily blended rate times hours-34*8)	10 days	$2,720
Travel cost	2 onsite resources	$3000 per resource	$6,000
Helpdesk calls	$60 per call	50 (5 calls per resource)	$3,000
Bandwidth	$1000 per month	6 months of IPLC	$6000
Remote desktop /VMWare	$400 per VMWare for 6 months	8 offshore resources	$3200
Governance Cost	4% of resource cost	Resource cost- $342,000	$13,680

ROI-Final Figure

The ROI is calculated as following : (Return- Investment)/Investment

Return	$1000,000
Investment	$647,1000
ROI	54%

Part 3- Analysis

Conclusions

- Total overhead cost ($307K) nearly equals cost of resources ($342K).

- ROI rapidly dissipates with leakage of defects to production. With every defect leaked, ROI decreases by about 2.5% as returns diminish while the cost goes up.

- ROI also dissipates if reported defects are trivial in nature. i.e. business does not seek to fix it.

- Low defect count during testing not necessarily imply lack of test team's maturity. However, lower quality risk could trigger reduction in testing budget.
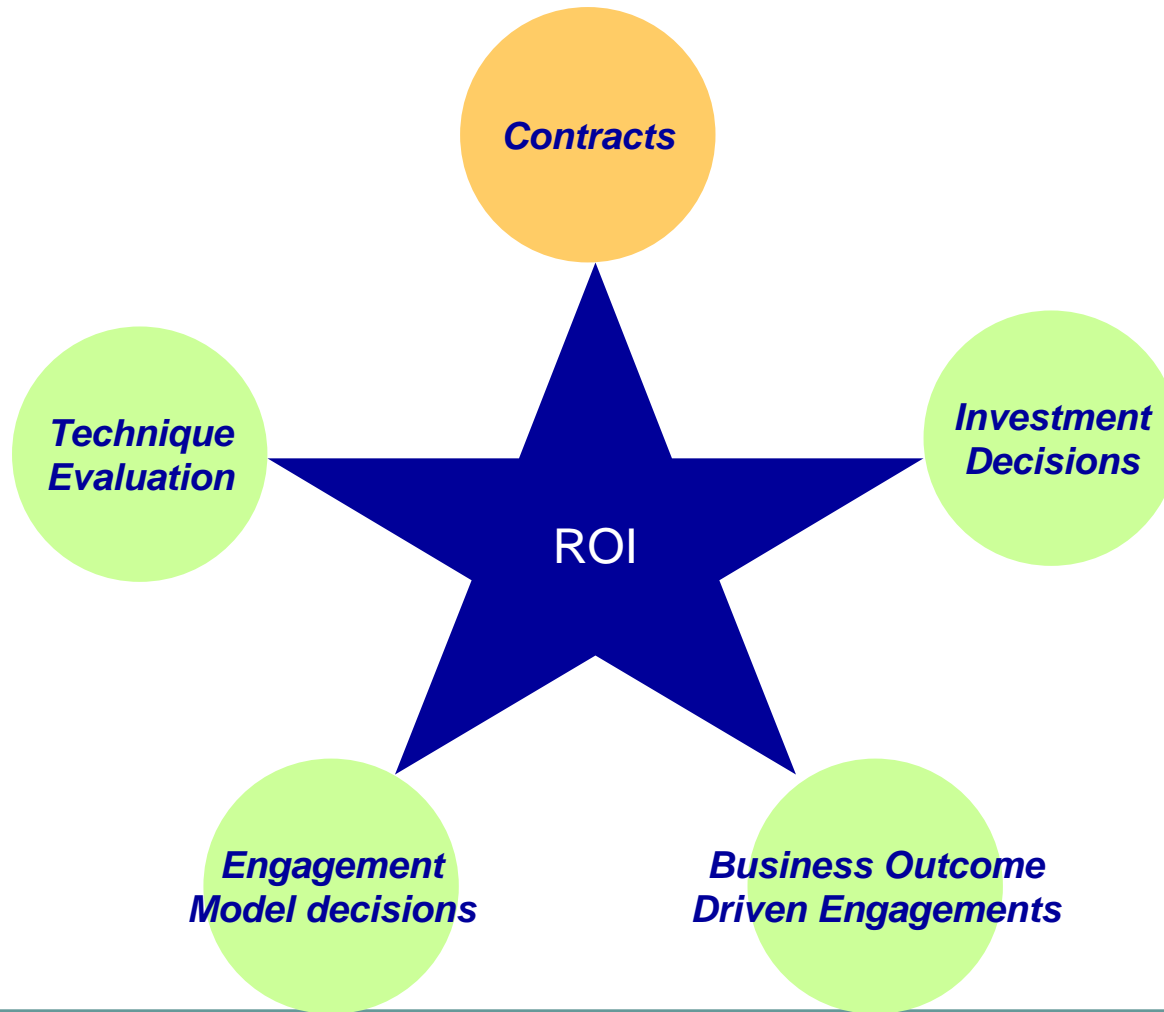
What to do with ROI?

- Maximize ROI by reporting high priority defects during testing

- Maximize returns by contributing to enhancement of the application.

- Supplement returns through other activities such as documentation, knowledge management, efficient reporting, adopting consultative approach e.t.c.

- Track all associated costs of testing

What not to do with ROI?

- Use in isolation to judge the effectiveness of testing team

Benefits of ROI Computation

Contracts

Technique Evaluation

Investment Decisions

ROI

Engagement Model decisions

Business Outcome Driven Engagements

Critique

- Testing is much more than defect finding.
- Meaningless defects may be reported to maximize the ROI
- Other areas not captured through ROI may be ignored
- In the ROI table all defects are considered equal.
- Business costs and returns associated with defects are not considered.

# *Part 4- Top Pitfalls in contracts*

Typical Offshoring Contract

Typically the offshore contracts have following elements

- Flat rates for resource types. E.g.: Offshore test engineer, offshore test lead, onsite test lead e.t.c.
- Other cost definitions, such as air travel
- Overtime and corresponding rate definitions
- Occasional attrition penalty clause

Top Pitfalls in Offshore Testing Contracts

1. No incentive for maximizing defect removal
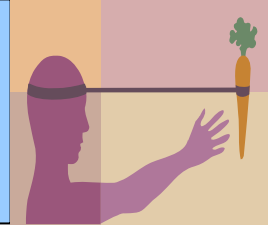
- No incentive to report defects early
- No incentive for increasing the reported defect count during testing
- No incentive for reporting business critical defects
- No incentive for focusing on application's likely usage scenario.
- Productivity clauses may exist, but are of little use to business which seeks to remove the defects during testing and not how many test cases are executed on a day.

Top Pitfalls in Offshore Testing Contracts

2. Lack of risk sharing in agreements

- 100% testing of an application is not feasible and calculated risks are assumed.
- Outsourcing is a mechanism to manage risk
- The risks related to defect leakage arising due to quality of testing or injudicious selection of scope are entirely borne by customers

Motive + Means = ?

An interesting video…

Top Pitfalls in Offshore Testing Contracts

3. Incentive to lower the skill level of the team
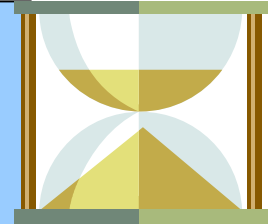
- Gross margins on resources vary from 80% at the fresher level to 40% at lead/manager level.
- Resource rates are not defined by skill, capability or experience of the resources
- Outcome is predictable

Top Pitfalls in Offshore Testing Contracts

4. Lack of incentive to retain the team

- Productivity gains and improvement in quality of defects reported are achieved over long period of time as offshore team absorbs domain and business knowledge.

- Once at peak of skills, the resources are lost as they cannot further their career inside the project.

- The promotions cannot be easily granted as it impacts project margin. Flat rate structure is the source of this problem.

Top Pitfalls in Offshore Testing Contracts

5. Contract inflexibility/ fixed vendor margins
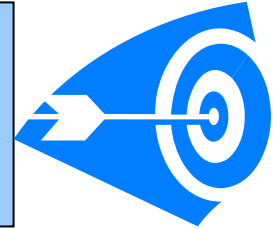
- Given the lack of flexibility in contracts the vendor margins are fixed and assured.
- The cost structure are designed to operate within the operating margins.
- Contract inflexibility takes away the ability to respond to inclement situations and scaling & configuring operations according to the risks.
- For the example used in ROI computation vendor is likely to earn gross margin of 55% on revenue of $342K. With implementation of automation team using two members, the revenue and margin drop at same time as fewer and better skilled, thus better paid resources would have to be engaged at existing rates. After implementation of automation suite vendor is likely to lose around 10% on revenues and about 4% on margin.
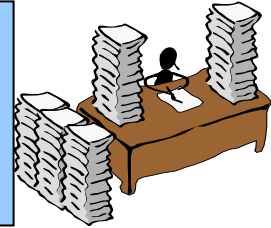
Top Pitfalls in Offshore Testing Contracts

6. Lack of promotion of excellence

- No stipulation around who will pay for training the resources
- Excellence is not defined at project or individual level, even in a Testing center of excellence (TCOE) setup

Top Pitfalls in Offshore Testing Contracts

7. Inappropriate productivity measurements

- Test case based productivity measurements may be stipulated in certain contracts.
- Aforesaid lowers the emphasis on defect detection.
- Test case based productivity metric encourages formation of smaller test cases to boost up apparent productivity of the team.

Part 5- Contract remediation options

Contract Remediation Options

1. Skill & experience based payment

- Flat rate structure does not best serve the interests of the project

- Some effort would be required in definition of skill, capability and experience level

- The aforesaid effort would have a useful by-product in terms of aligning testing priorities of the client and the vendor.

Contract Remediation Options

2. Collaborative team pyramid construction

- Pyramid creates an effective team structure
- Margins and cost to customer are the typical influential factors in the formation of the pyramid. Other considerations such as bringing in diverse experience to maximize defect detection potential should also be influencing the design of the pyramid.
- The pyramid must be collaboratively built by customers and respective vendor

Contract Remediation Options

3. Progressive payment increase
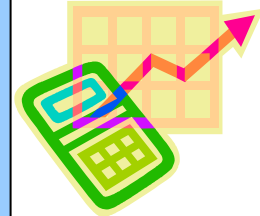
- Typically vendor resources last in a project for two years at the most.
- Lack of career and remuneration growth leads to their exit.
- After the team acquires certain experience there is an opportunity to convert the economy team to a privileged team with intimate business and domain knowledge.
- Clients can help retain resources by paying annual hikes to resources. Compare this practice to paying annual salary hike to employees.
- Higher cost would be compensated by higher returns and savings on costs associated with knowledge transfer and training

Contract Remediation Options

4. Separate Cost Items

- Flat rate structure covers management costs and other indirect costs.
- Once the team structure changes the flat rates become a liability as they are based on certain assumptions.
- As an example, a small team is billed at a particular rate assuming 25% non-billable coverage provided by the manager. Once the team grows or gets into new area it may require 100% of manager's time. With the flat rate it is not feasible to accommodate the request for additional management coverage. It may result in a situation where an engineer is asked to cover up over and above his/her job.
- Paying for separate cost items builds accountability and flexibility to adapt to changing organization scenarios and priorities.

Contract Remediation Options

5. Risk reward mechanism

- Link some of the payments to defects detected during testing and later in production.

- The risk and reward must be proportional to ensure fair play

- The variable payment component should be limited to ensure that other areas such as documentation, reporting e.t.c. are not neglected.

Contract Remediation Options

6. Deferred payments (aka Warranty)

- Quality of any service or product is not sufficiently evident until it is put in use for extended period of time
- Consider deferred payments to adequately capture defect leakage metrics and get true picture of the ROI.
- Quality of other deliverables provided by testing team such as documentation, reusable components e.t.c. would also become evident over extended period of time.
- Pay for warranty coverage and pay back with interest!

Contract Remediation Options

6. Higher charges for overtime

- When extra work is planned, hiring additional resources should be preferred to overtime.
- Overtime may not necessarily produce extra result when productivity measures are not tightly defined and the progress is not closely monitored. An hour of overtime per day is equivalent to rate hike of 12.5% while de-motivating the vendor employees at same time.
- There is no incentive for vendor employees for the overtime.
- De-motivated employees = lower defect detection
- Higher charges for overtime would serve to discourage overtime and encourage better planning.

Contract Remediation Options
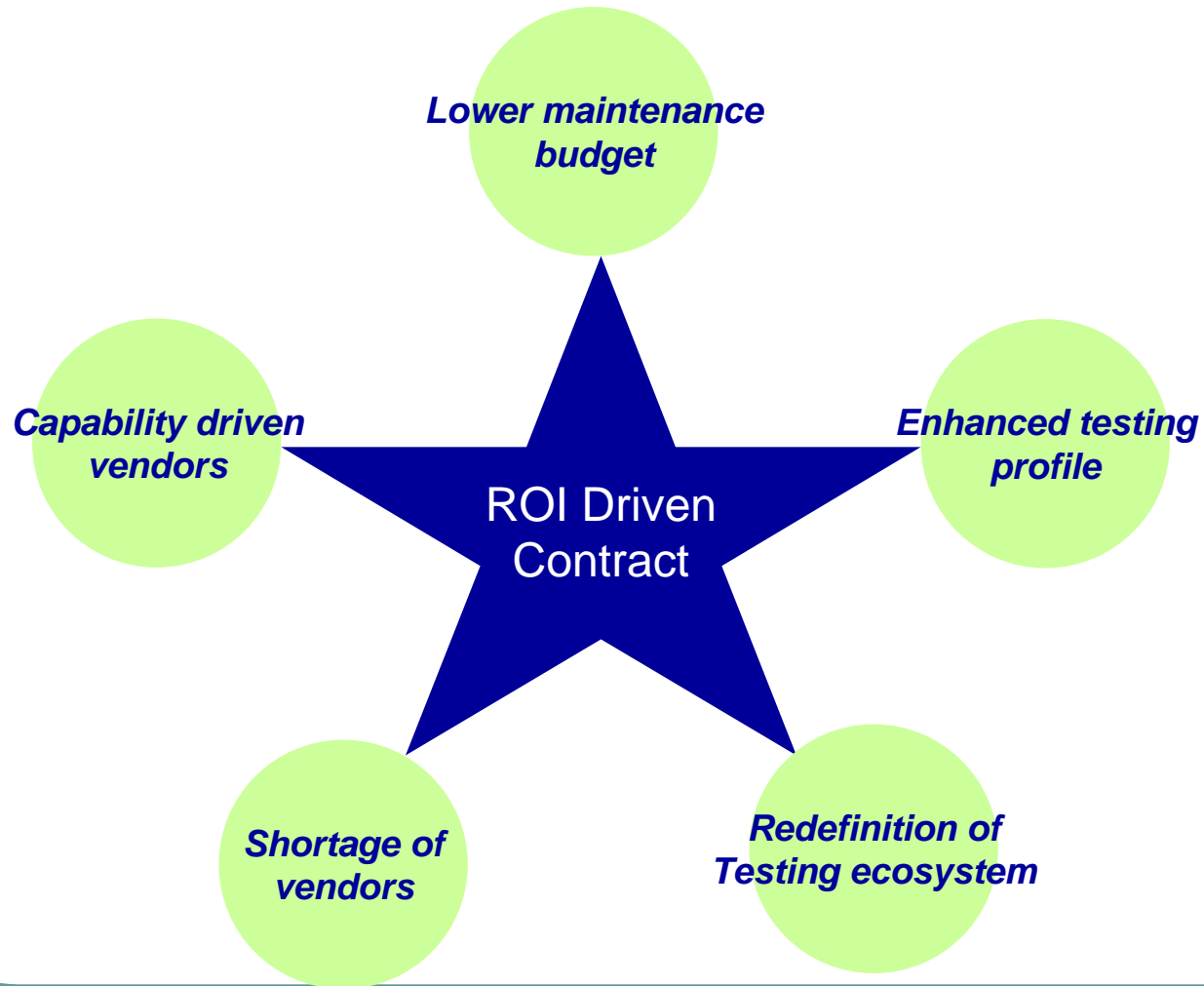
6. Other Considerations

- Choose right priorities that further business-IT alignment. TCOE, scrum, CMM, tools, engagement model should not be the end goals but the means to attain higher ROI.

- Set correct savings expectation and do not expect Thanksgiving doorbuster sales savings. There is no return policy! Even 30% savings should be considered good enough. Consider other offshore advantages as well such ability to ramp-up and ramp-down as per business needs and access to large pool of testers.

- Recognize the career growth aspirations of vendor employees. It doesn't cost you a dime!
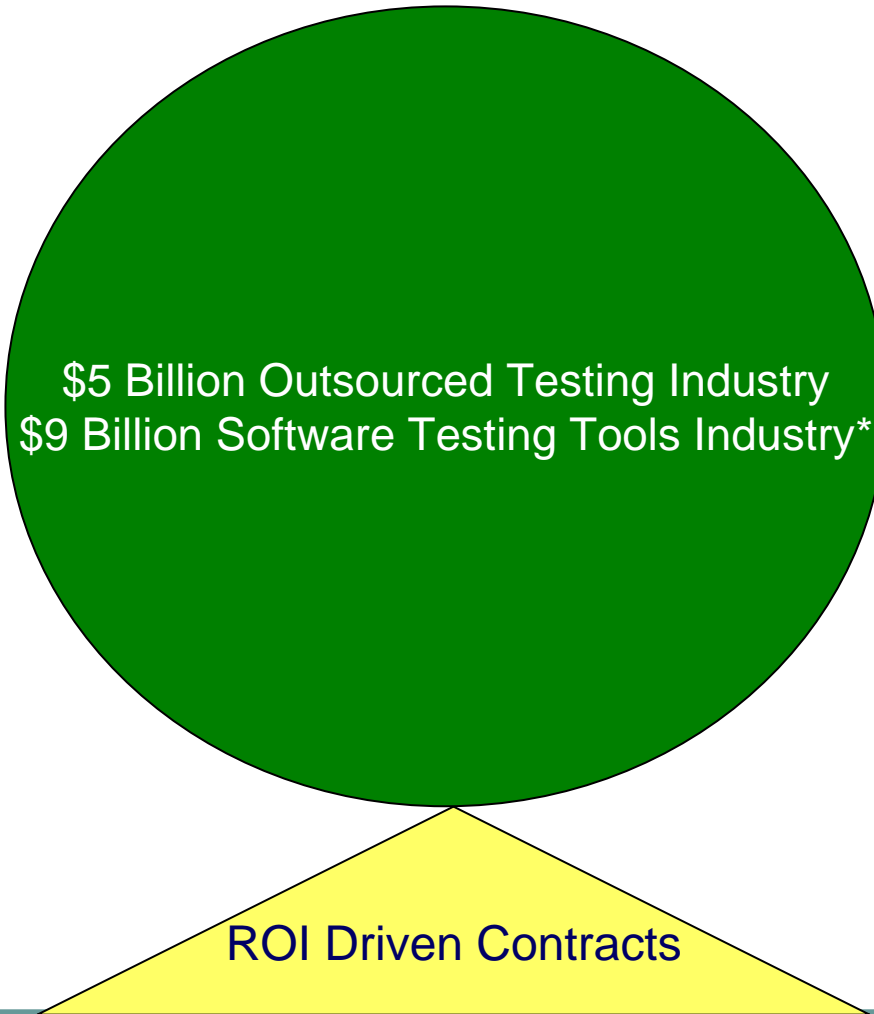
Part 6- Analysis

How to fail with ROI driven contracts?

- Using it as a tool to drive down vendor rates
- Not doing adequate homework in identifying testing skills, risks and scope before entering into a contract.
- Not balancing rewards with risk
- Greed (what if the vendor earns too much!)
- Attempting to contract without having strong in-house QA group
- Attempting to contract without educating in-house QA group on business-IT alignment and business outcome driven IT.
- Assigning responsibility without providing authority.

Consequences of ROI Driven Contracts

Lower maintenance budget

Capability driven vendors

ROI Driven Contract

Enhanced testing profile

Shortage of vendors

Redefinition of Testing ecosystem

Stakes (Redefinition of Testing Ecosystem)...

$5 Billion Outsourced Testing Industry
$9 Billion Software Testing Tools Industry*

ROI Driven Contracts

Final Thoughts

- Focus on defect detection and introduction of graded payments according to skills of the resources would remove structural roadblocks in promoting excellence and achieve higher offshore testing ROI.

- Clear understanding of vendor's operating and financial model is necessary to establish good working relationship with vendor and improve the ROI.

Q & A