



Cutting Costs Cutting Corners

Some risks and benefits of trying to get there fast

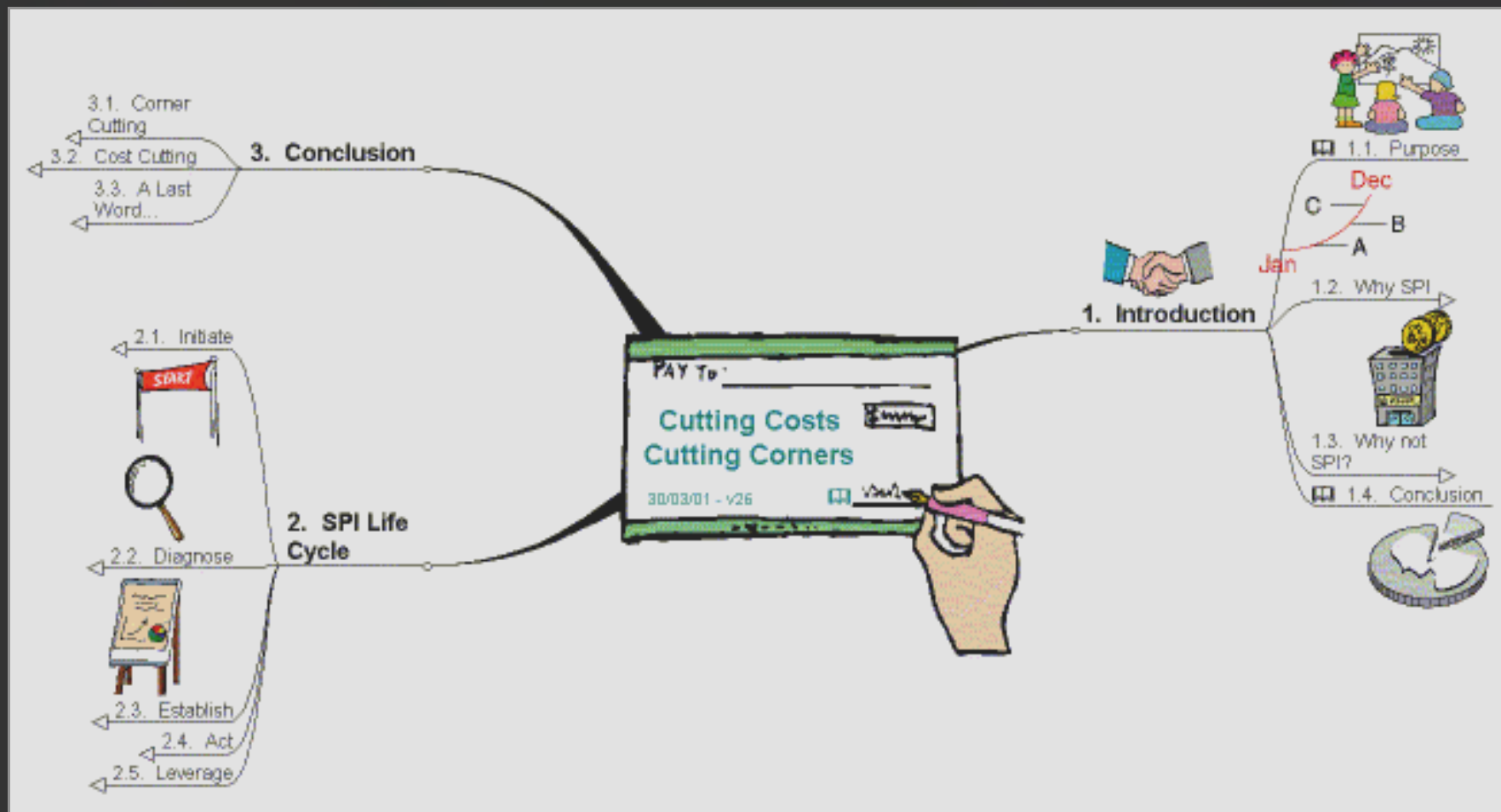
Peter Leeson

ESEPG, Amsterdam

13 June 2001



Cutting Costs Cutting Corners



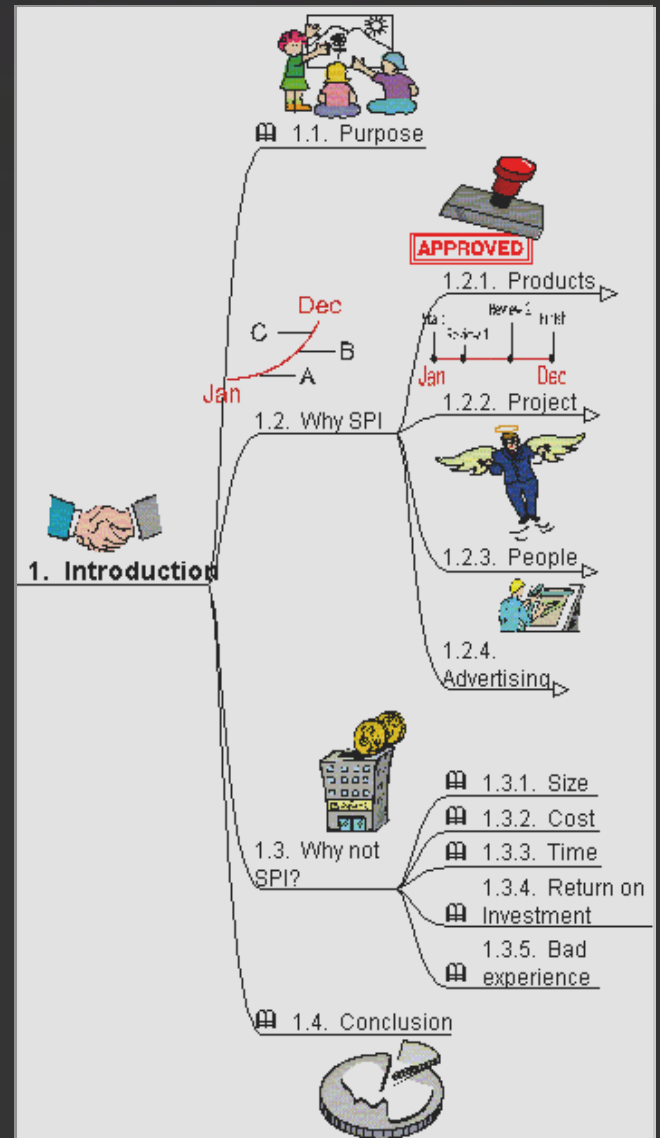
Schedule

1. Introduction

- Purpose
- Why SPI
- Why Not SPI
- So?

2. The SPI Life Cycle

3. Conclusion





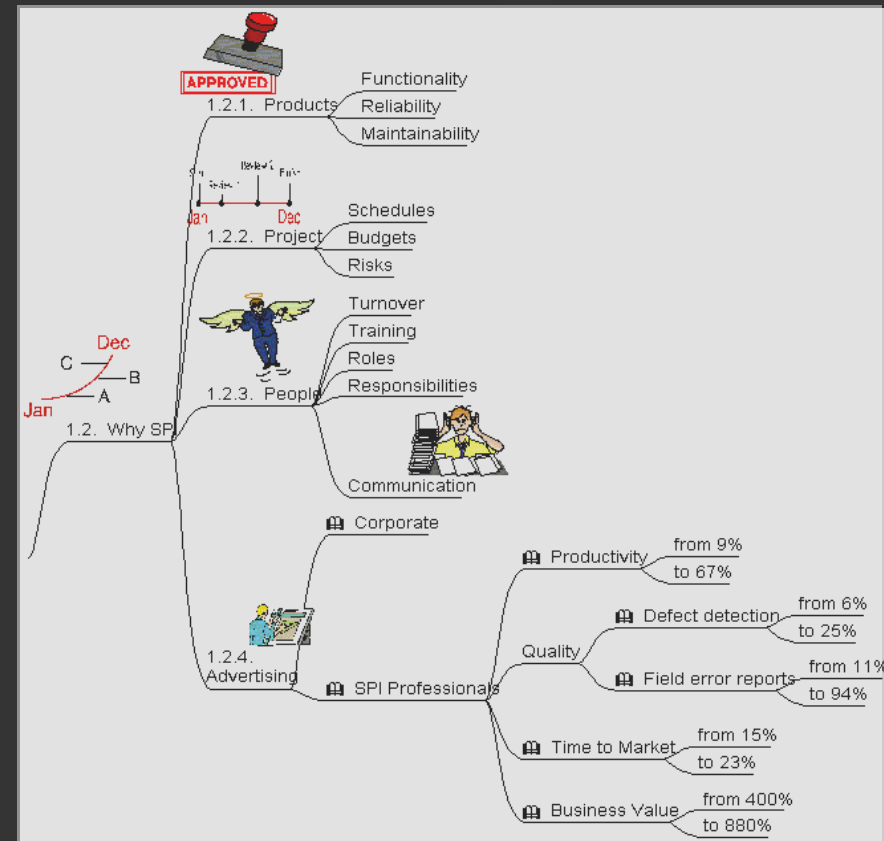
Purpose Statement

SPI:

- Why are so many people doing it?
- What are the real benefits
- Can we get results faster?
- Must it be so expensive?
- Are there any guarantees?

Why SPI?

Why should you be interested in Software Process Improvement to start with?





Why SPI

Products

- Functionality
- Reliability
- Maintainability

Project

- Schedules
- Budgets
- Risks

People

- Turnover
- Training
- Roles
- Responsibilities
- Communication

Advertising

- Corporate
- SPI Professionals

SEI ROI Data

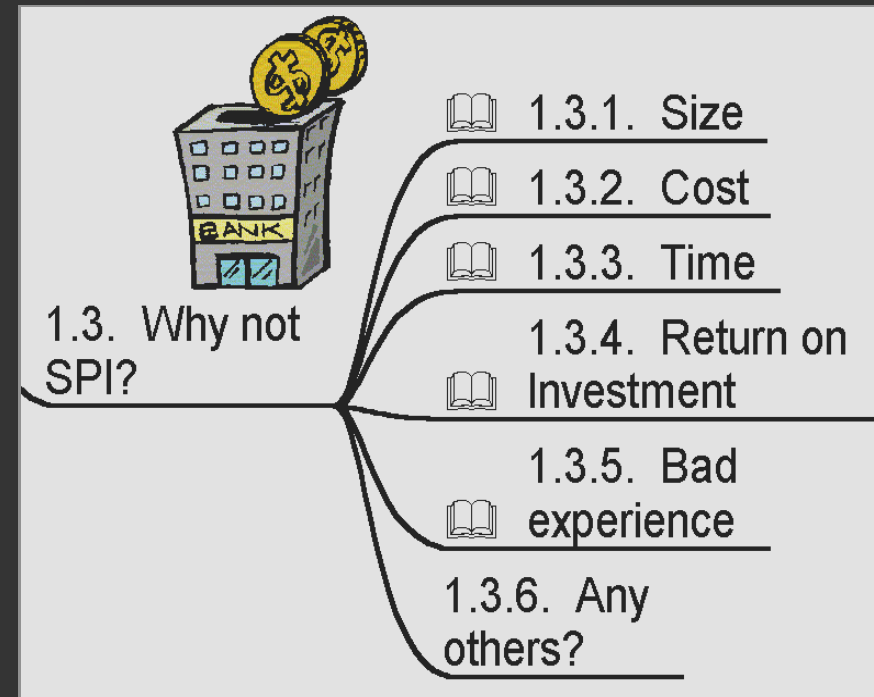


- Yearly productivity increase in LOC
 - from 9%
 - to 67%
- Yearly increase in early defect detection
 - from 6%
 - to 25%
- Yearly reduction in field error reports
 - from 11%
 - to 94%
- Overall business value (ROI)
 - from 400%
 - to 880%
- Yearly decrease in time to market
 - from 15%
 - to 23%



Why Not SPI?

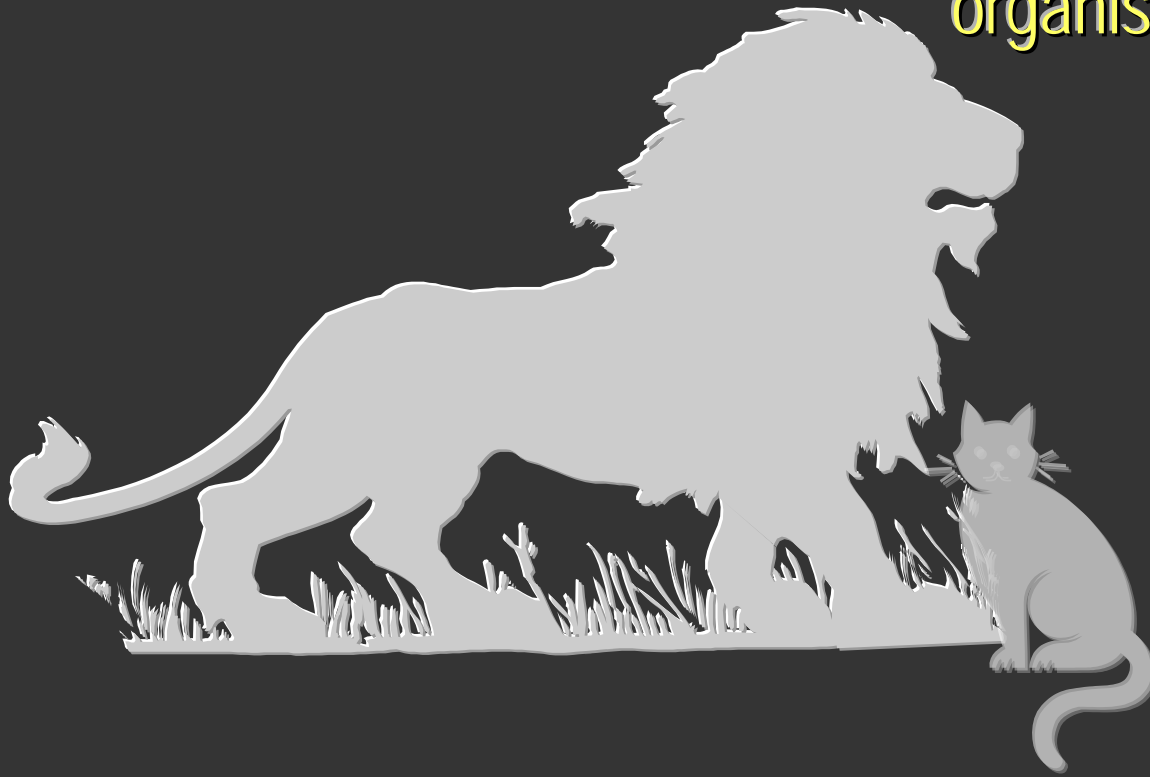
Let's review some of the main reasons not to perform Software Process Improvement





Why not SPI: Size

This not for us. It is too expensive and heavy and does not apply to small organisations.



Why not SPI: Cost



The SEI's data speaks of an extra investment of \$1000 to \$2000 per engineer per year. For 50 engineers, that means an increase in my overhead of \$75000. I can hire two people for that price!



Why not SPI: Time

We don't have time this year,
perhaps next year...





Why not SPI: Return on Investment

We have been working at this for 12 months and have no significant improvement yet. We are still level 1





Why not SPI: Bad experience

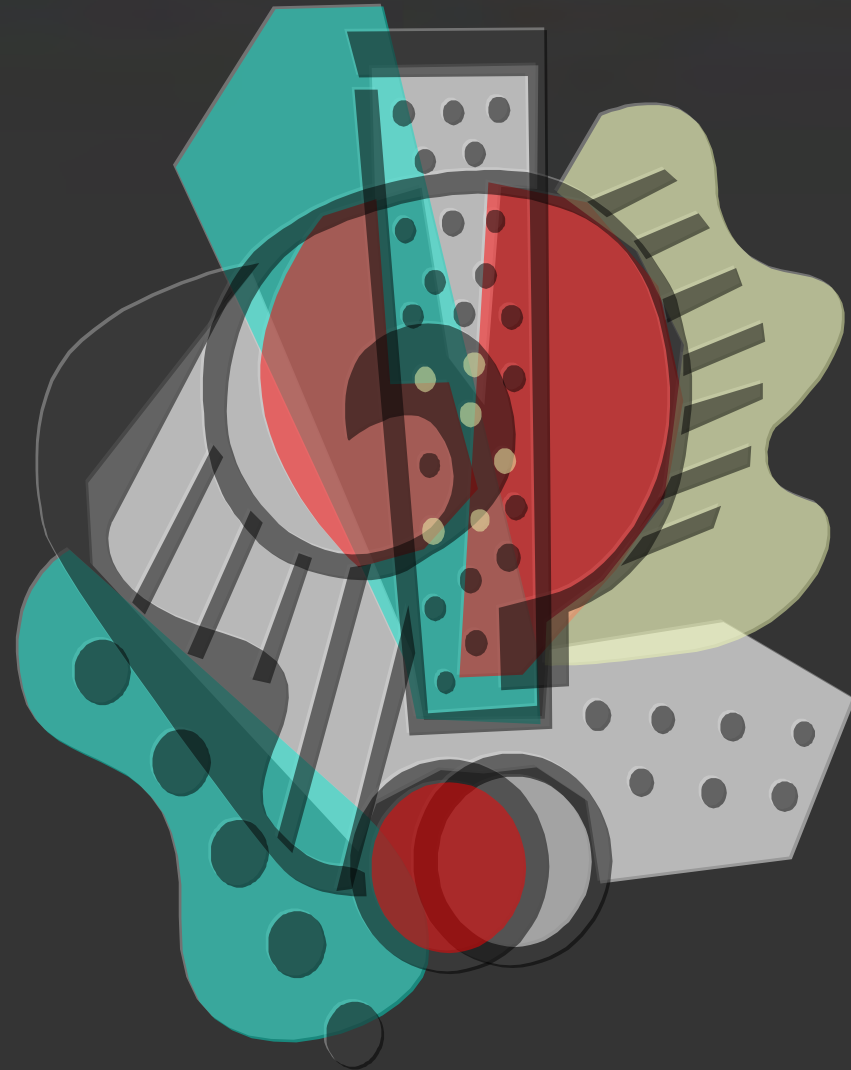
"X" tried and failed...





Why Not SPI?

What's your reason?

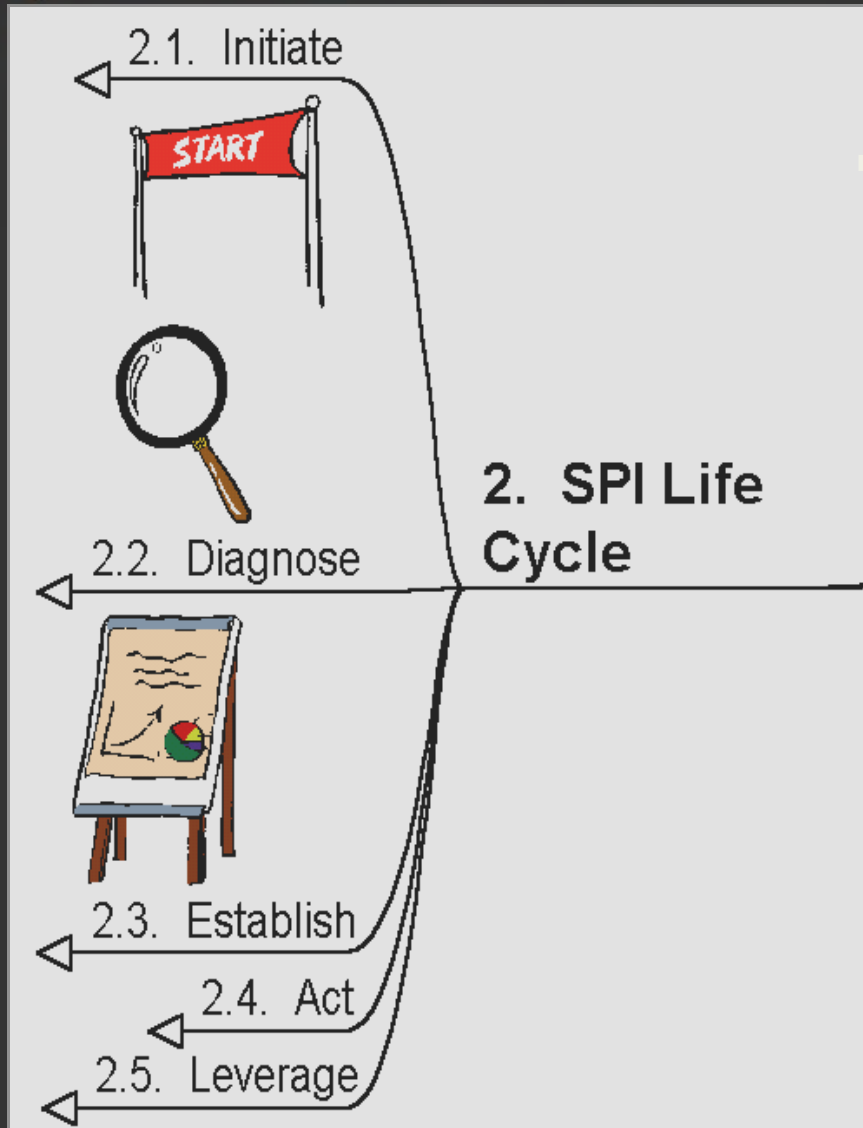




Return on Investment

There is no return on investment without an investment. If we can minimize the investment and maximize the return, we can really reap the rewards of our efforts

Schedule



1. Introduction

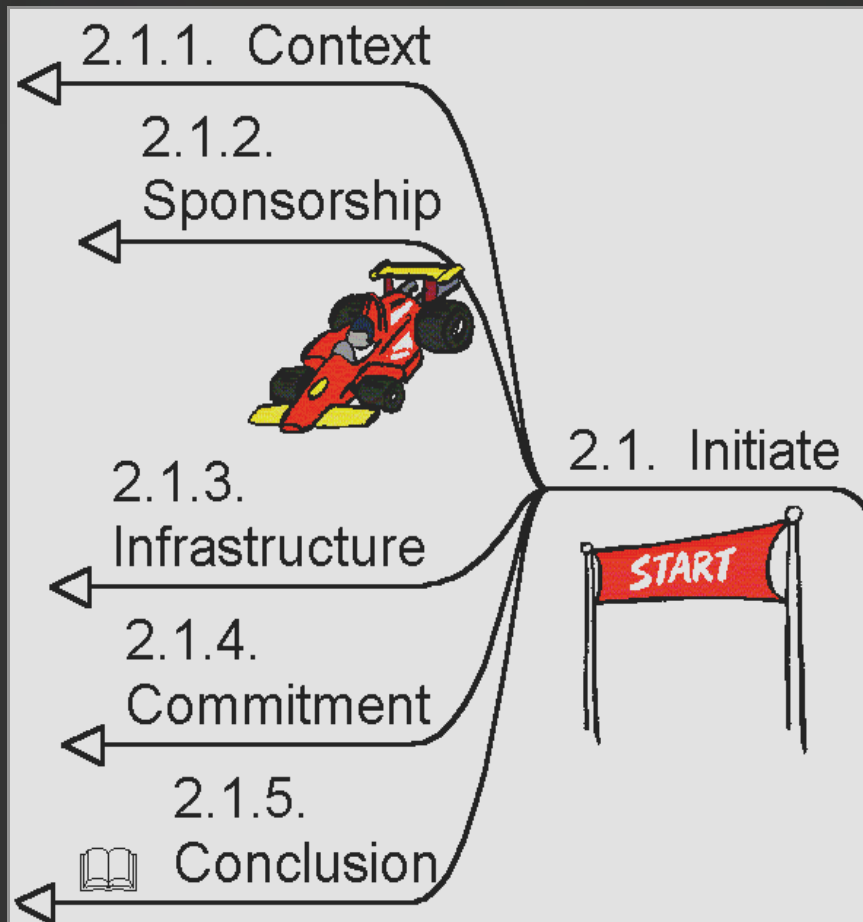
2. The SPI Life Cycle

- Initiate
- Diagnose
- Establish
- Act
- Leverage

3. Conclusion

2.1 Initiating the SPI Effort

How to get started, some thing you should not forget



Context



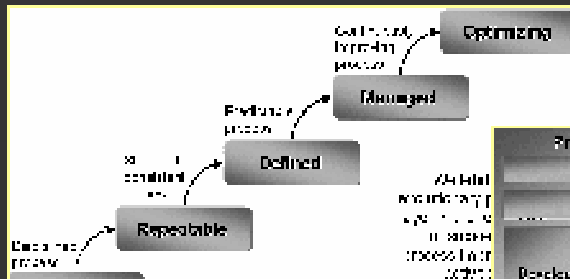
Investigation

- Model
- Consultancy

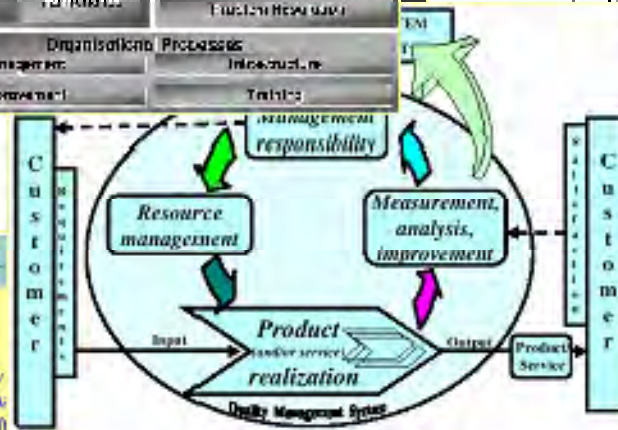
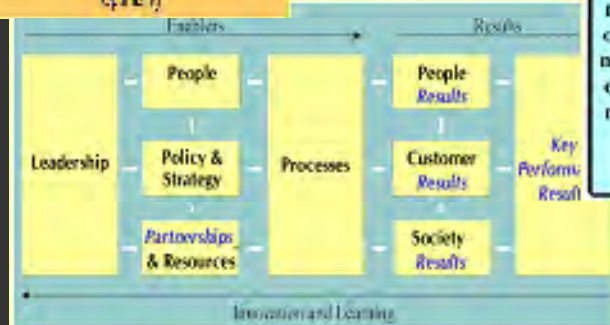
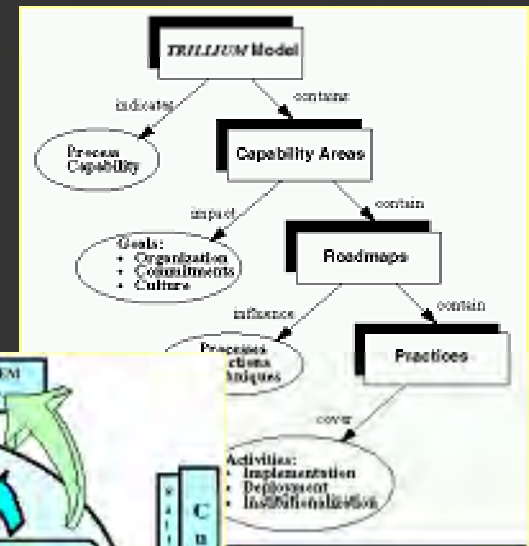
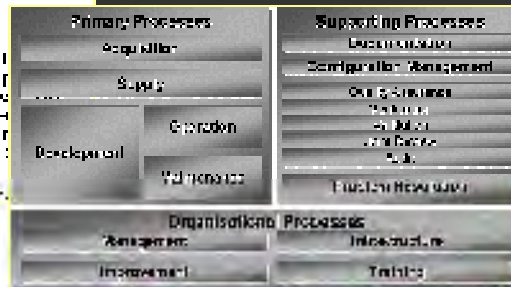
Training

Business Objectives

Context - Choosing a Model



Level	Customer Requirements Capability Levels	Stage Requirements Maturity Levels
Level 0	Incomplete	None
Level 1	Partial	Initial
Level 2	Managed	Managed
Level 3	Control	Control
Level 4	Controlled, Managed	Controlled, Managed
Level 5	Optimizing	Optimizing





Using a Model - Advantages

- Reminder of what you should be looking at
- Priorities to be considered in implementation
- Checklist
- Allows comparison to industry standard



Using a Model - Disadvantages

All models are wrong - some are useful

Only a checklist

Short term focus as to what needs to be accomplished for certification rather than long term focus on what needs to be accomplished for the organisation.

Controversies regarding staged vs continuous models, etc.

Fees to pay to licensing organisations such as the SEI

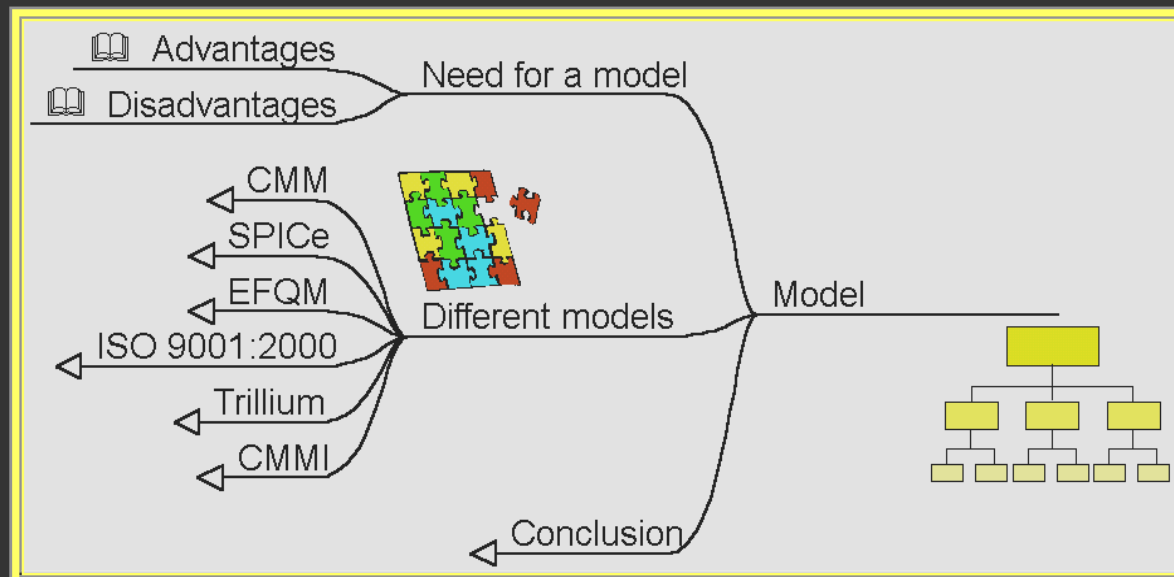
Do I Need a Model?

Most models are OK

No model is perfect

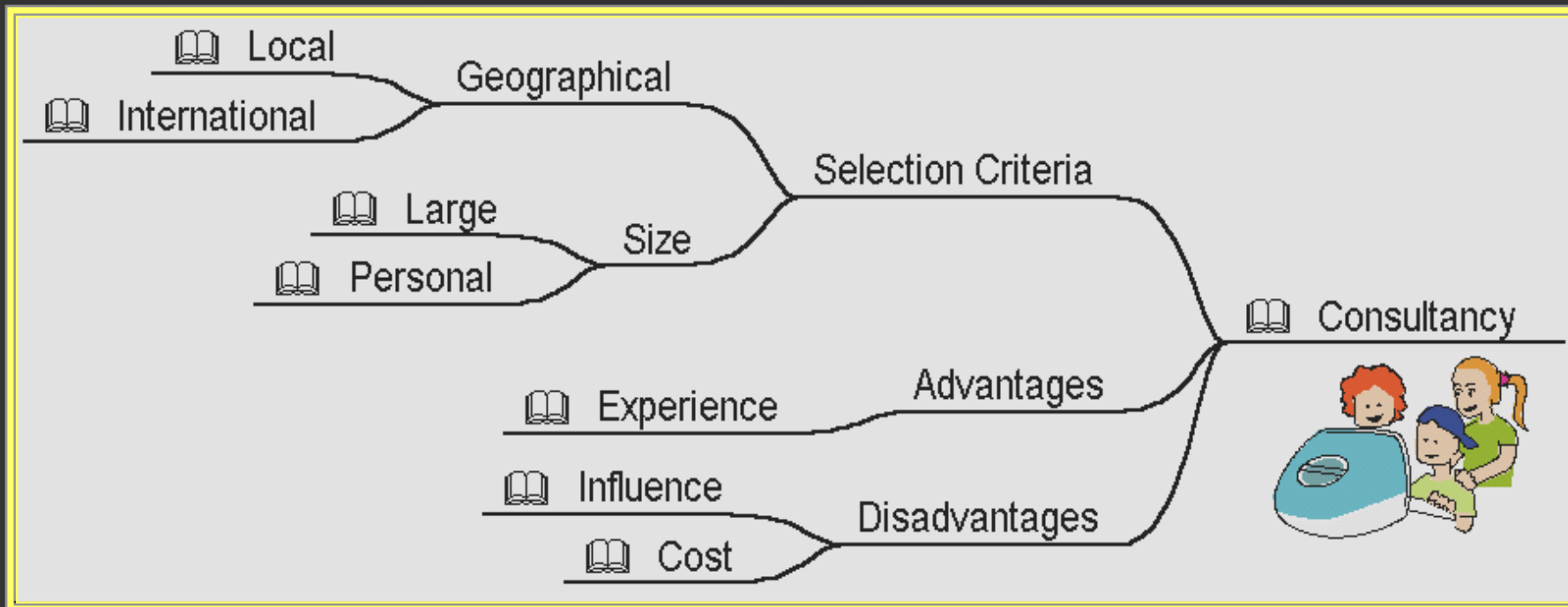
Models do make life easier

- If they are used as a means, not as an objective

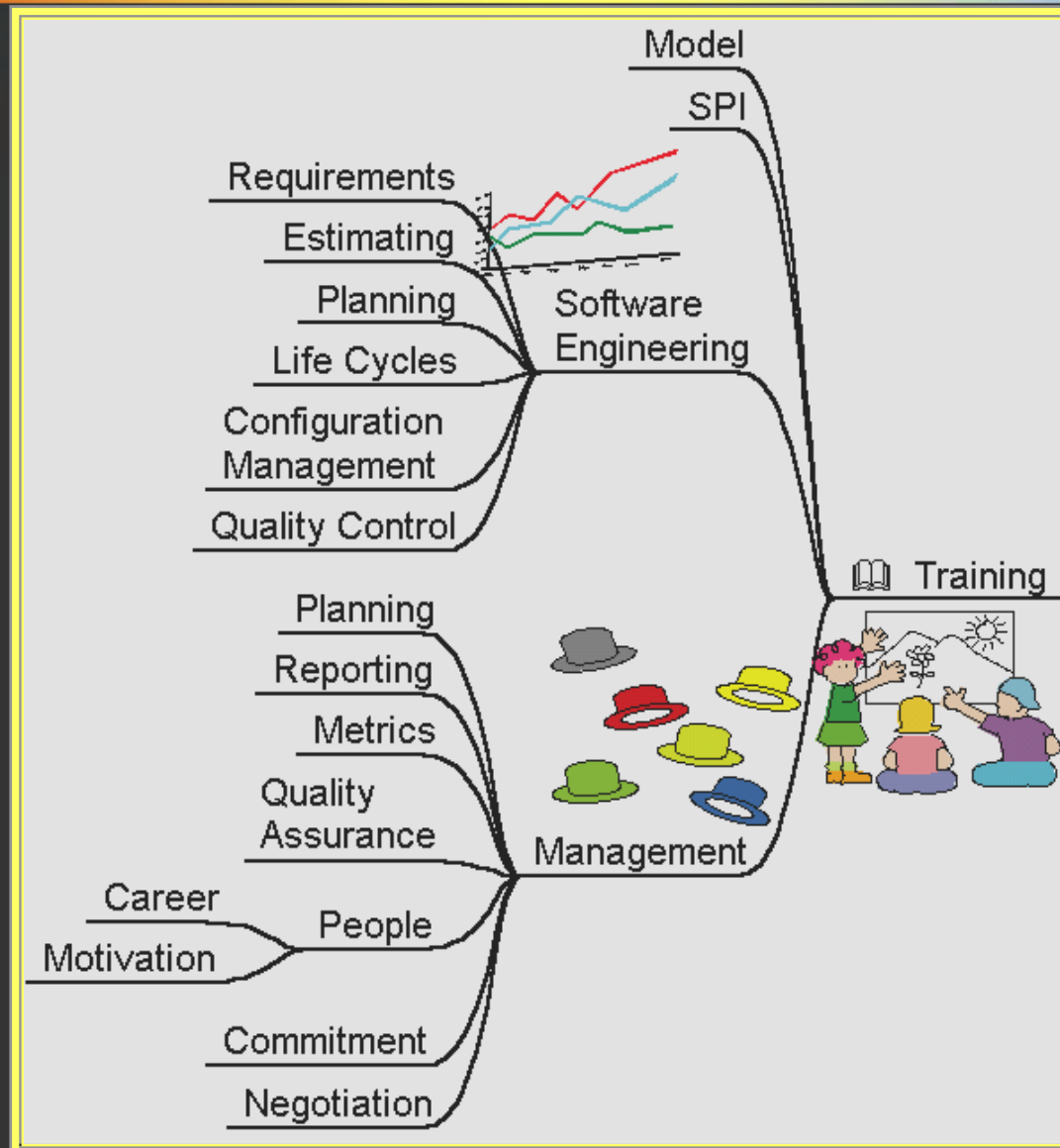




Consultancy



Training





Training

It is critical for the management and the practitioners to understand what they are getting into so as to be able to best decide what they are trying to achieve

Ensure that everyone has the understanding and knowledge required to perform their SPI activities

- Train if needed



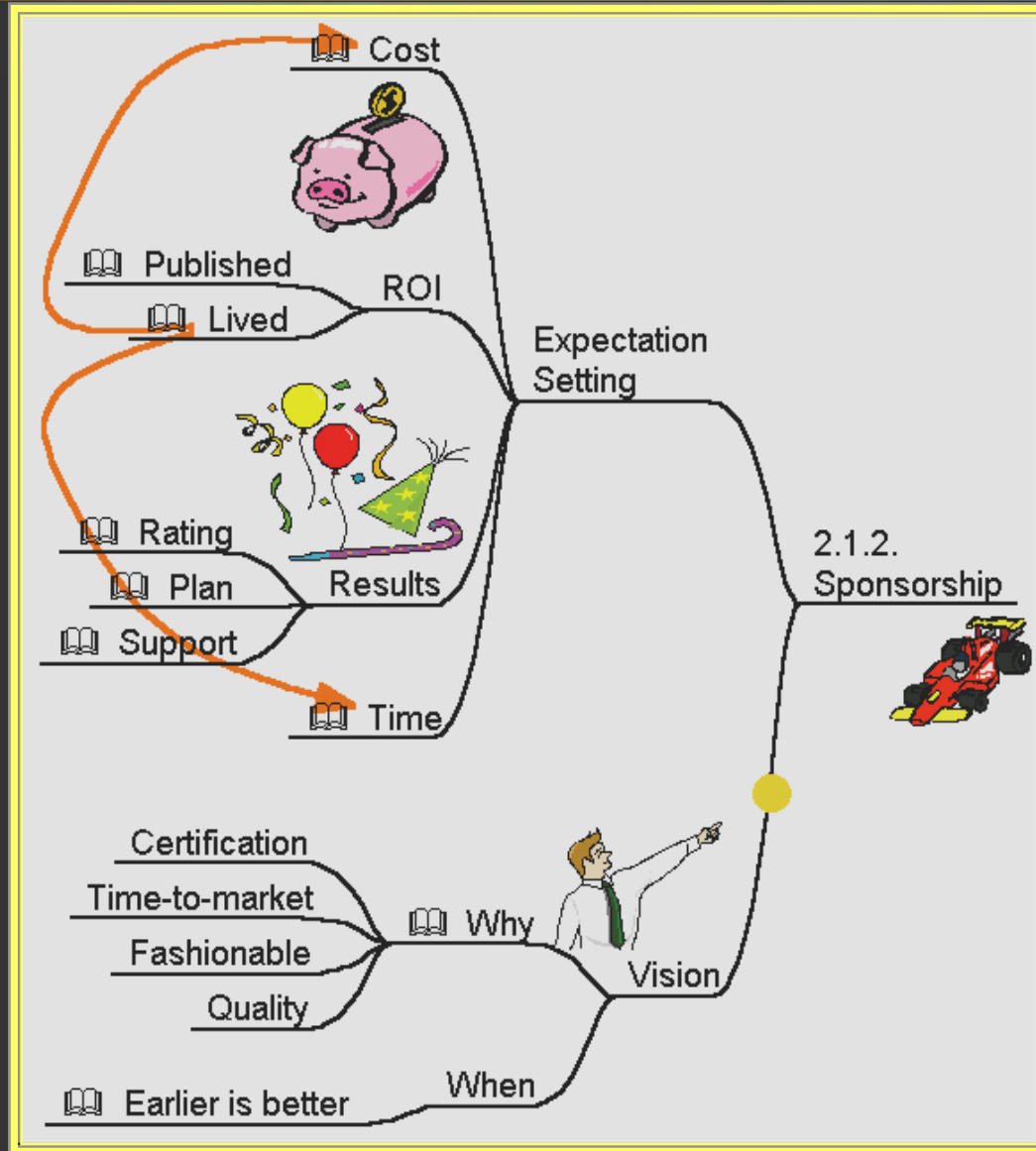
Business

What are your objectives?

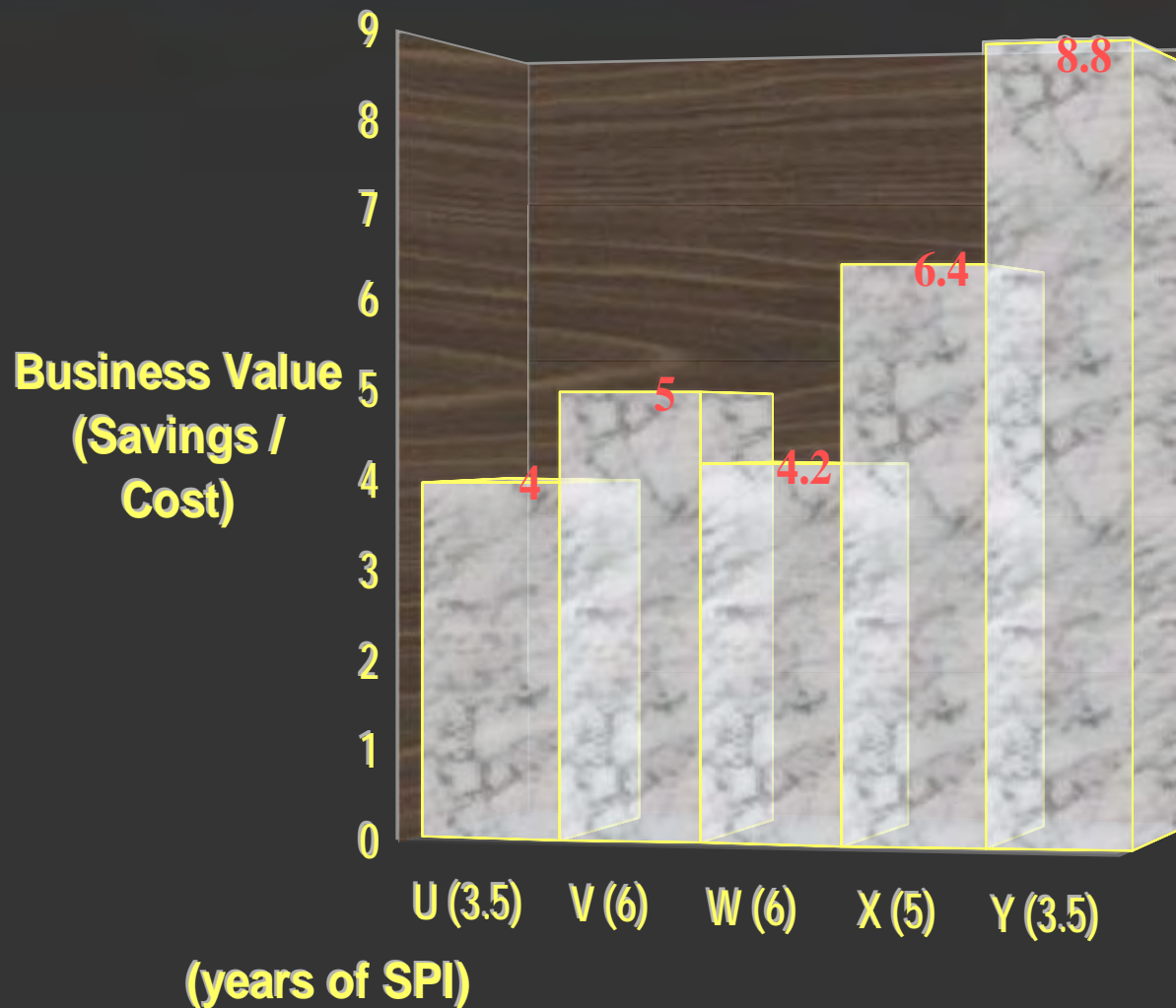
- Attain Level X
- Another logo on the letterhead and a plaque in the lobby
- Increase quality
- Decrease time to market
- Be better than the competition
- Decrease staff
- Increase share value



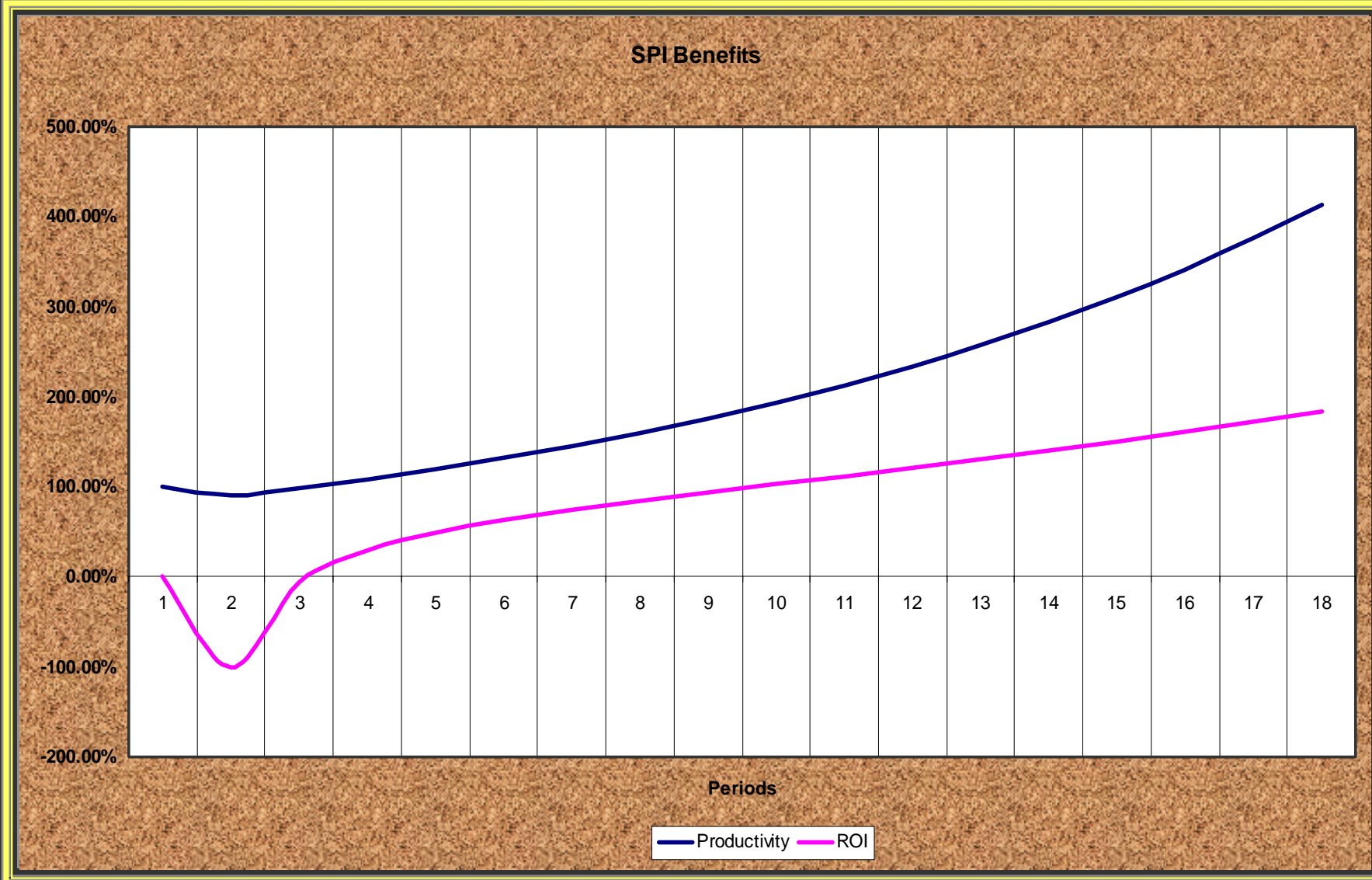
Sponsorship



Sponsorship - Business Value



Sponsorship - ROI



Sponsorship - Results



Rating

Plan

Support



Sponsorship - Time

You know this is not going to be done overnight?



Sponsorship - Vision

Why

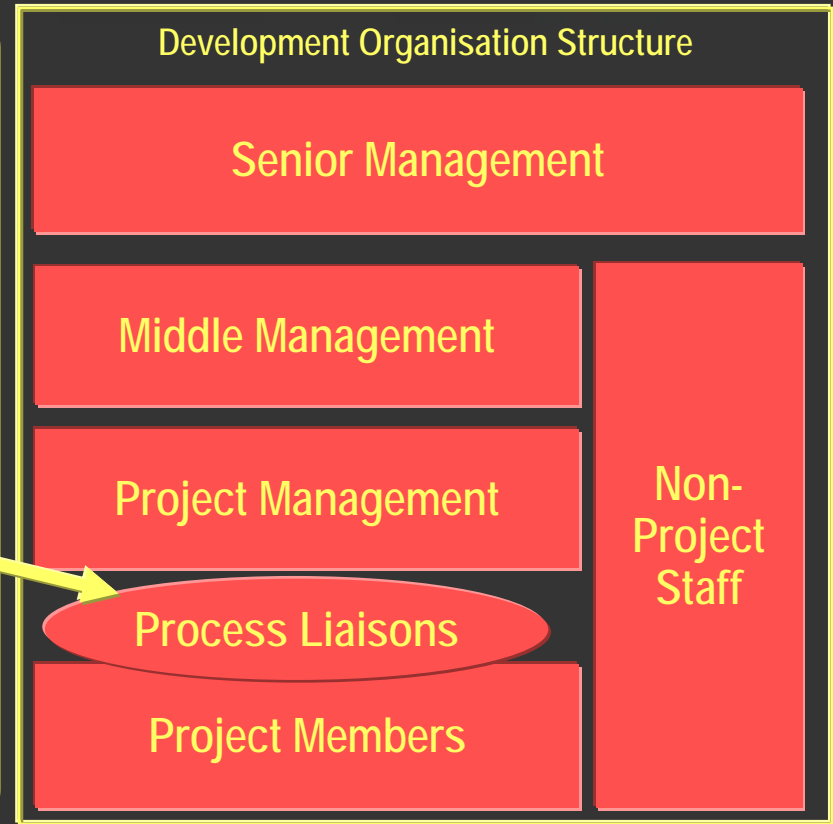
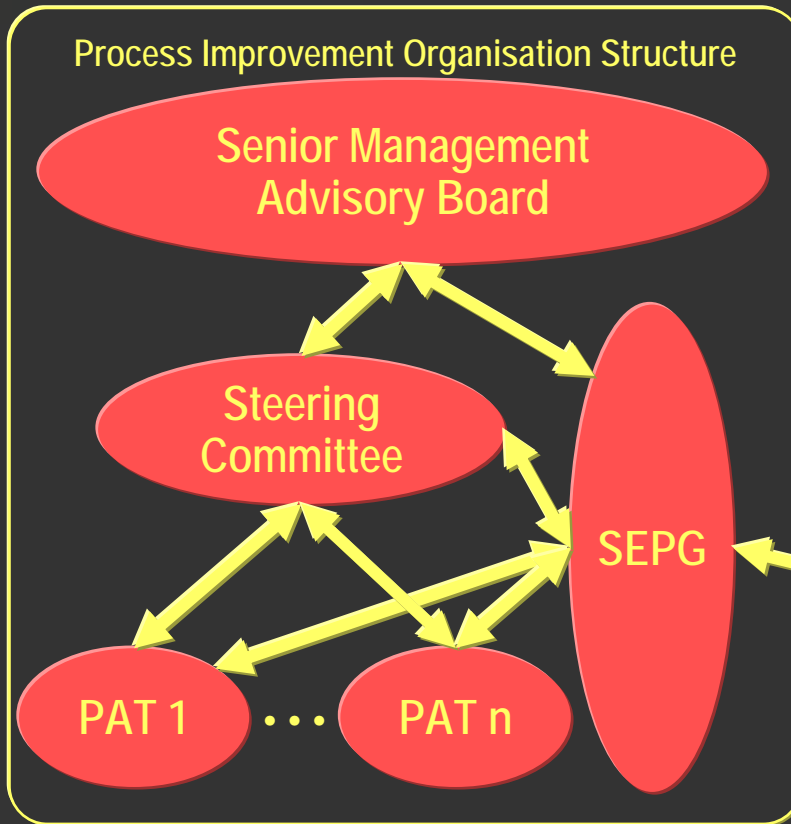
- Certification
- Time-to-market
- Fashionable
- Quality

When

- Earlier is better



Infrastructure





Infrastructure - Initial Staff

Motivated

Able

Respected

All Levels

- Management
- Consultancy
- Developers

Consultants



Infrastructure - Initial Schedule

Training

- Model
- Assessment
- SPI
- Engineering

Assessment

Next steps



Commitment

Investment

- Time
- People

Responsibility

- Success or Failure
- Ownership



Initiating your SPI

This is the make or break phase of your effort

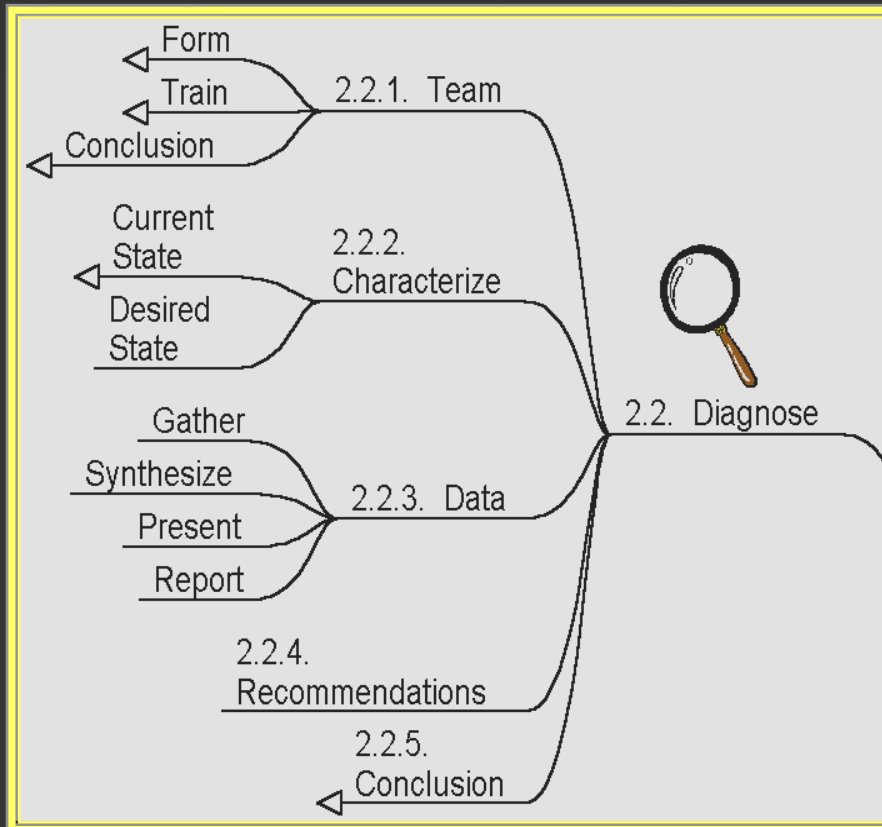
The following need to be carefully managed:

- Setting context
- Setting expectations
- Gaining commitment
- Establishing sponsorship
- Establishing ownership



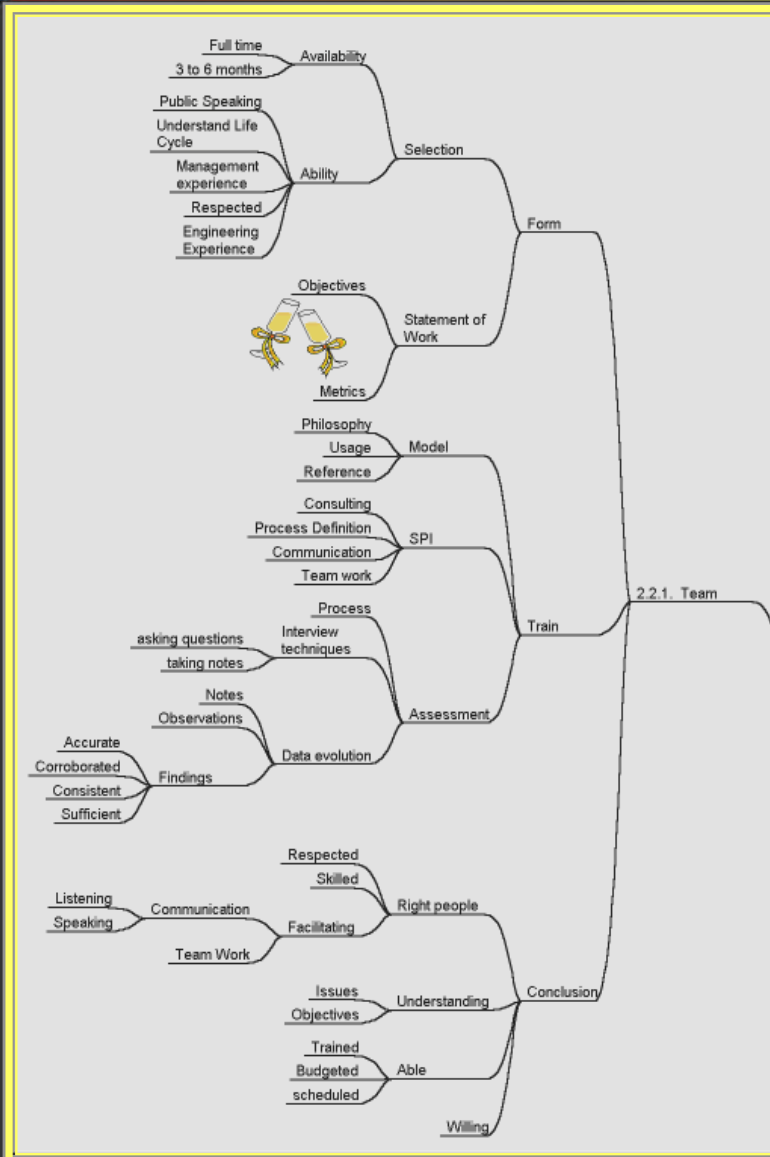
2.2. Diagnose

Team
Characterise
Data
Recommendations





Team Selection



Availability

- Full time
- 3 to 6 months

Ability

- Public Speaking
- Understand SDLC
- Mgt experience
- Respected
- Engineering Experience

Train



Model

SPI

Assessment

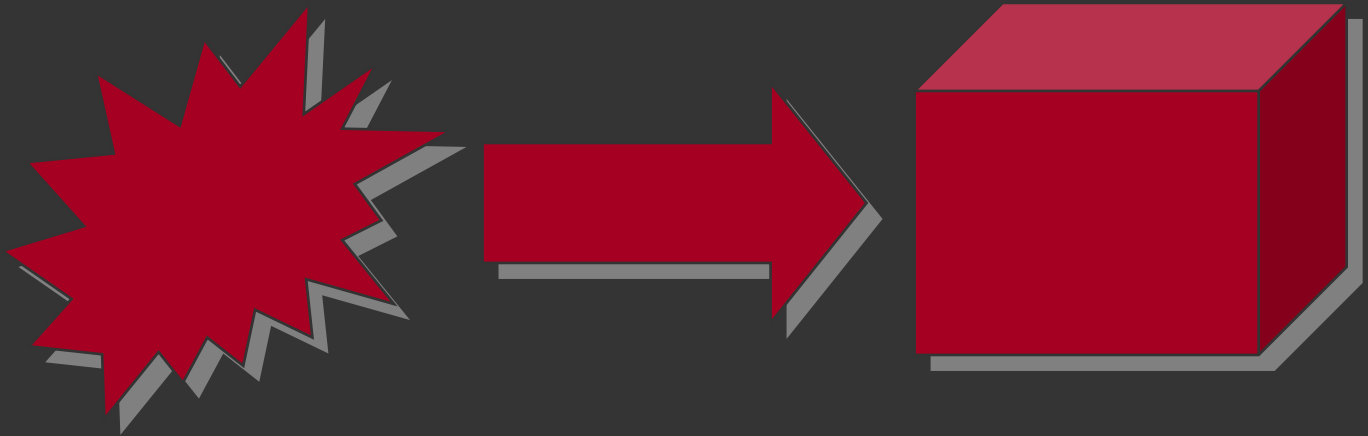




Characterise Objectives

Current State

Desired State





Current State Assessment

Light Assessment

CBA IPITM

Constructive Assessment Technique



Light Assessment

Quick

Cheap

Collaborative

Findings only

Optional Strengths

No focus on business consequences

Little time for practical recommendations



Formal

Expensive

Findings

- Strengths
- Weaknesses



Constructive Assessment Technique (CAT)

Formal

- Corresponds to CBA IPI™ and ISO 15504 requirements

Inclusive

Constructive



CAT Inclusive

Senior Management

Middle Management

Project Management

Developers

Support Staff

- SCM
- SQA
- SEPG



CAT Constructive

Business based

Self correcting

Future Looking



CAT Future Looking

Action

Recommendations

What makes sense



CAT Action

Produce a Statement of Work for the SPI effort

- What
- Who
- When
- How
- Why



CAT Focus

What makes sense for the business

Using a model



2.3. Establish Improvement Infrastructure

Business Priorities

Staff

- Steering Committee
- SEPG
- PAT

Approach

Train

Actions



Train

Steering Committee

- SQA
- Planning
- Metrics

SEPG

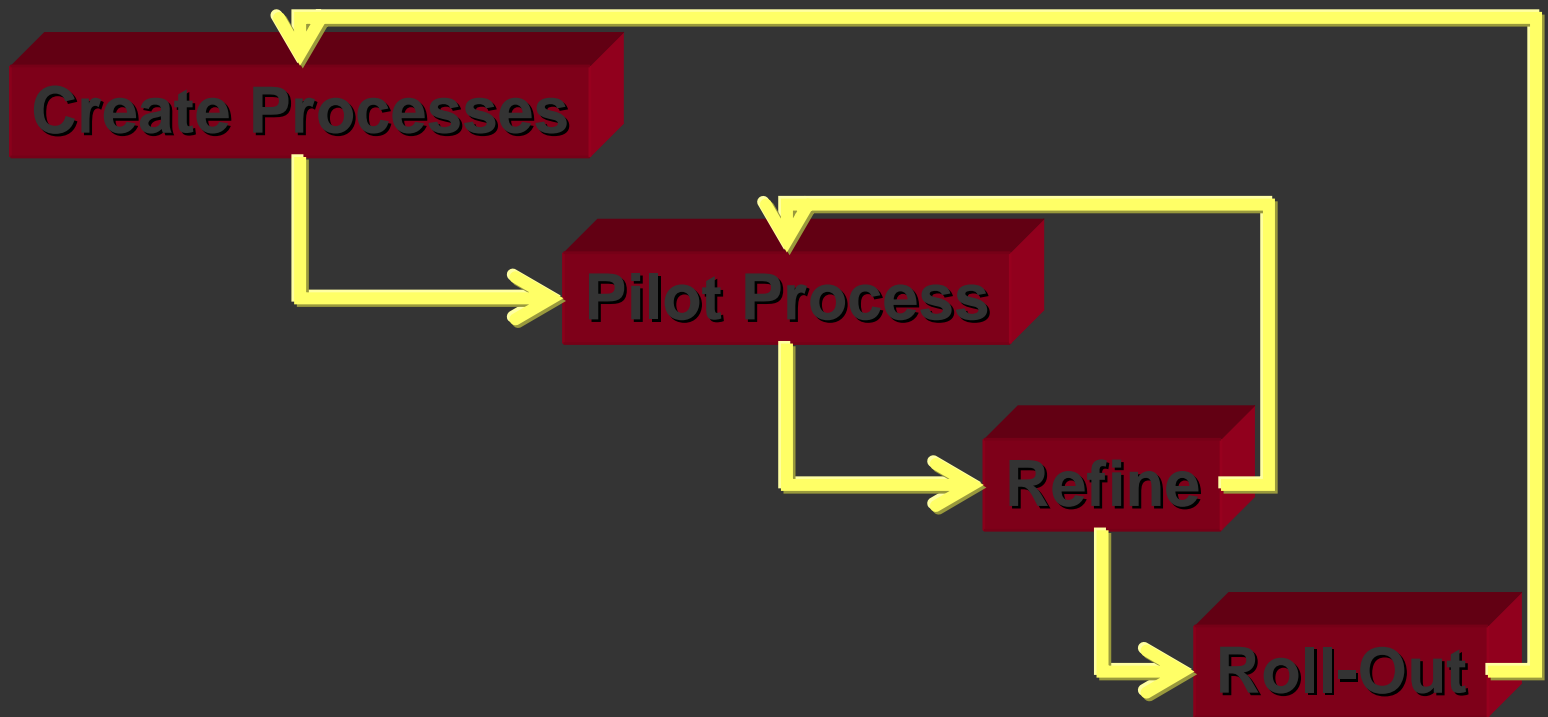
- Teamwork
- SPI
- Model

PAT

- Facilitation
- Team Building
- Area Specific Skills



2.4. Act



Create Processes



Gather Data

Focus

Evaluate

Define



Gather Data

Documents

- Policies
- Processes
- Procedures

Usage

History

- Success
- Failure

Context



Organisation

Business

Industry

World

Focus



CMM

- Level 2
- Levels 2 + 3
- Levels 2 to 5

Business

Evaluate



Identify

- what works
- what does not work
- decision-making process

Interfaces

- Organisational
- Work

Define



Initial draft process

Communicate

- Document
- Review
- Approve

Recommend

- Tools
- Practices

Initial draft process



Develop

Buy

Document

Review

Approve

Develop



Brainstorm

Studies & Theories

Complete

External



Buying Processes

Dependencies

- Policies
- Culture
- Customs
- Finance
- Criticality
- Risk Management
- Contractual Obligations
- The "Way We Work"

Kick start

- Change
- Adapt
- Examples

Pilot / Test



Select

Plan

Train

Communicate

Pilot

Measure

Roll-out



Assist

- Do it for them
- Do it with them
- Check they do it

Institutionalise

- Policy
- Train
- Support
- Manage
- Audit

2.5. Leverage



Monitor

Evaluate

Improve



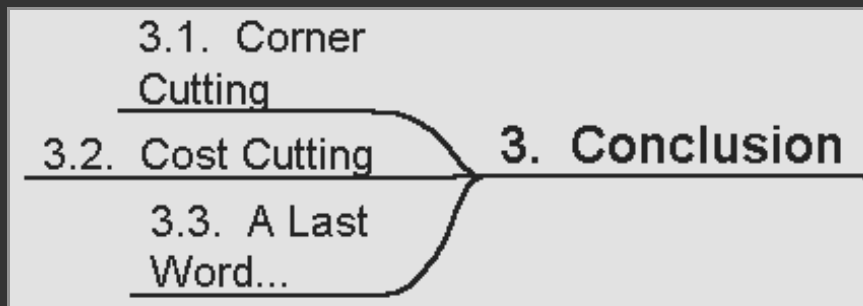
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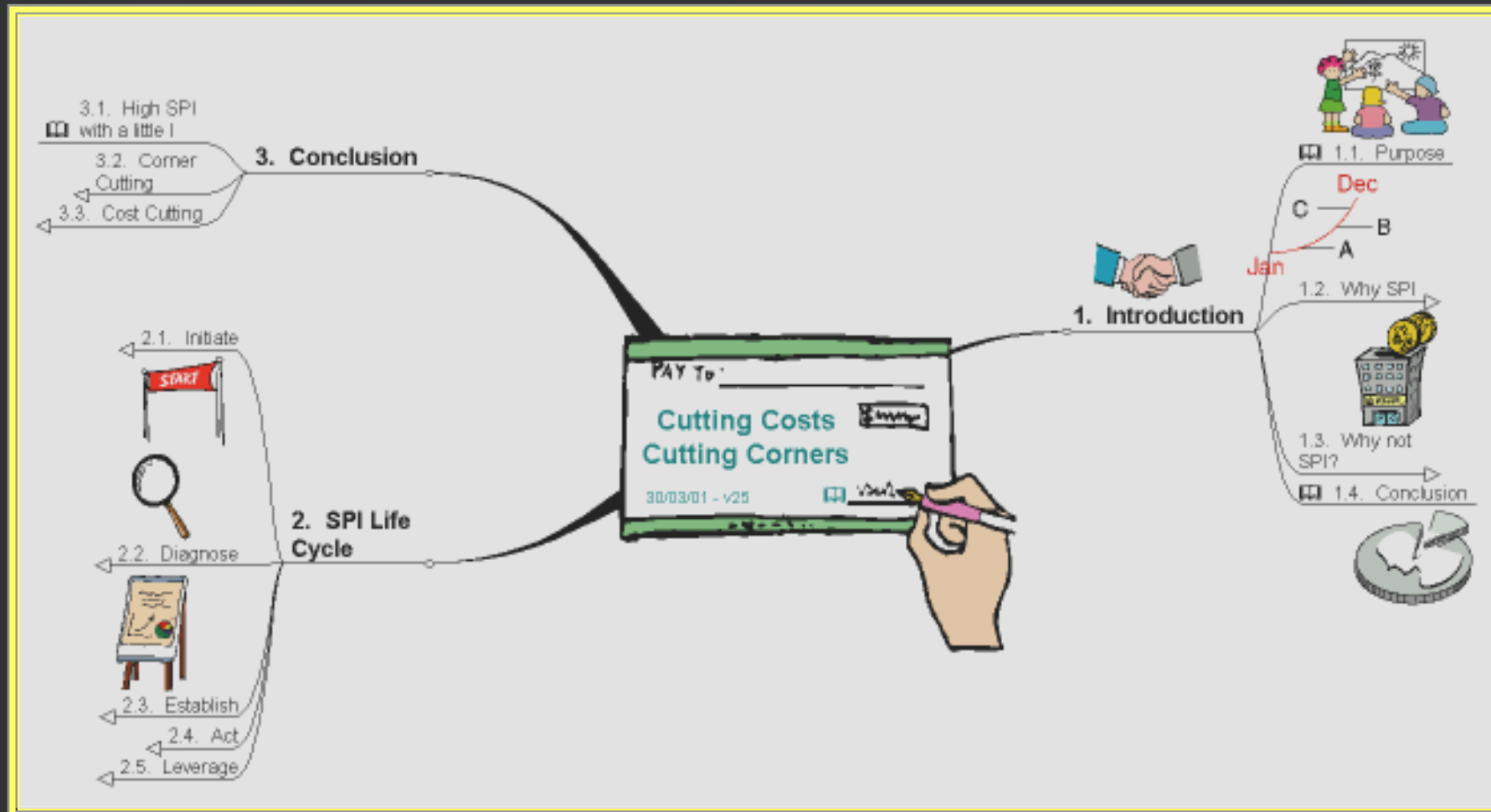
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Conclusion



Cutting Costs – 1/3



Focus on what is important for your organisation

Get professional help to get started

Get training

Get staff participation in defining the needs and improvements

Understand your strengths and weaknesses

Cutting Costs – 2/3



Management sponsorship

SEPG ownership

SQA controls

Practitioner commitment

Cutting Costs – 3/3



Focus on the way things are done

Document existing practices

Identify bottle-necks

Improve your software processes



Cutting Corners – 1/2



Focus on CMM(I)[®] level 2 only

Avoid SQA: quality is everybody's job, we don't need management spies

Buy the process

Invent new processes



Cutting Corners – 2/2



Just do it

- Without training
- Without support
- Without vision or plan

Establish an Ivory Tower Process and Quality group

Make the same people responsible for evaluating, defining, measuring, implementing and policing



High SPI with Little I

(I for Investment)



