



Improving Your Quality Assurance Program

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QA vrs QC: seeing the big picture



QA vrs QC: seeing the bigger picture

Quality Control is **DETECTION**
(Function performed by test engineers)

- Finding defects before release
- What we do to fix the defect

Quality Assurance is **PREVENTION**
(Function directed by management)

- Finding how defect was introduced
- Implement prevention processes

Enterprise Quality Assurance Benefits



Enterprise Quality Assurance Benefits

An ounce of prevention is worth a pound of cure!

- Better over all quality coordination between departments**
- Fewer Non-Standard releases**
- Less errors and rework**
- Increased customer satisfaction**
- Reduced cycle time**
- Reduce costs**
- Better QA coordination with Skyward**

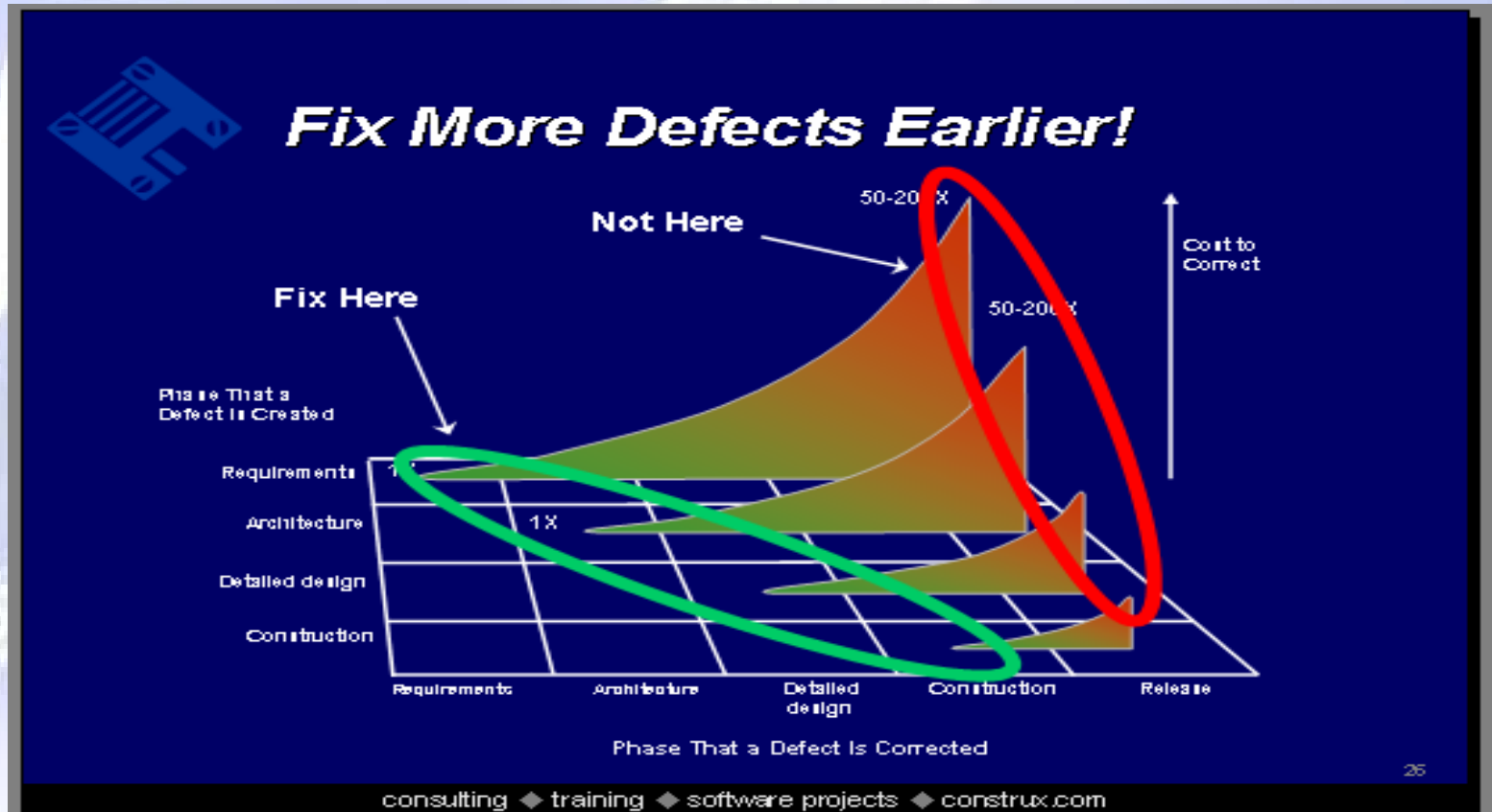
Cost of Quality



How can you measure the true cost of defects?

Cost of Quality

- 1st cost of quality (QC): find defects early
- \$1 to fix a defect in design
- \$1,000 to fix it in production



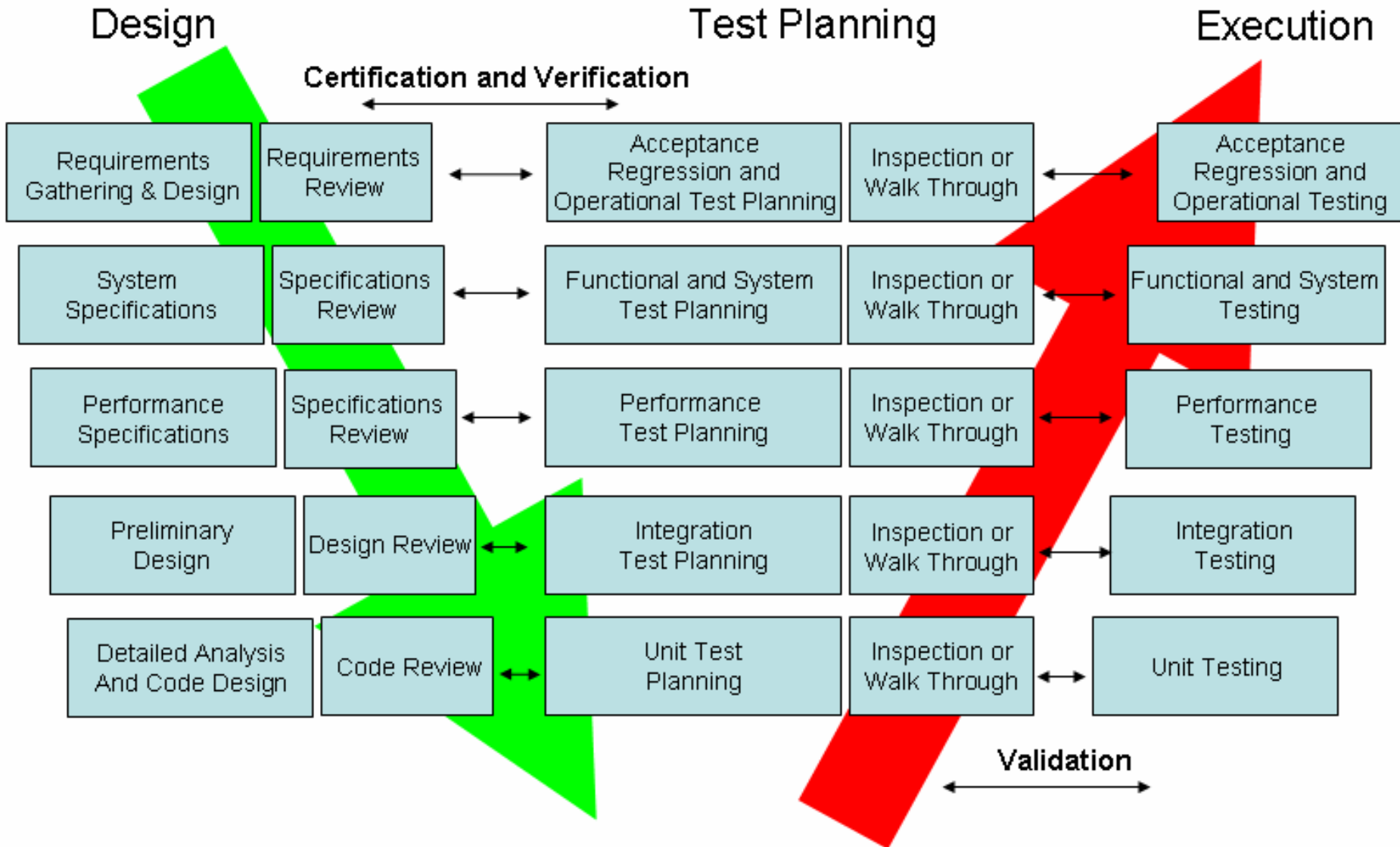
Cost of Quality (cont)

Finding defects early will reduce errors, lower over all cost and improve customer satisfaction.

We can do that by:

- Involving testers in development**
- Create testing as a part of design**
- Doing reviews and walkthroughs**
- Do lessons learned / debriefing**
- Document so it doesn't happen again**

Software Development Lifecycle



Cost of Quality (cont)

2nd cost of quality (QA): Time Investment

- **Measuring**
- **Root Cause Analysis**
- **Management's Evaluation and Analysis**
- **Risk Assessment**
- **Process Improvement Work Groups**
- **Debriefing / lessons learned sessions**
- **Documentation**
- **Training**

What are our next steps?



OK! Now I am going to just sit here on this stool and hang on and I want the cow to jump up and down

Some Plans Work Better Than Others!

What are our next steps?

Define the existing problems!

Some examples to look at might be:

- **Non Standard Releases**
- **Systems crashes**
- **Errors in releases**
- **Customer Satisfaction**
- **Standardization of processes**
- **Automation of testing**

How do we find the existing problems?

**The 710 cap
phenomena -**

**if a process is
not working,
there may be a
simple reason!**

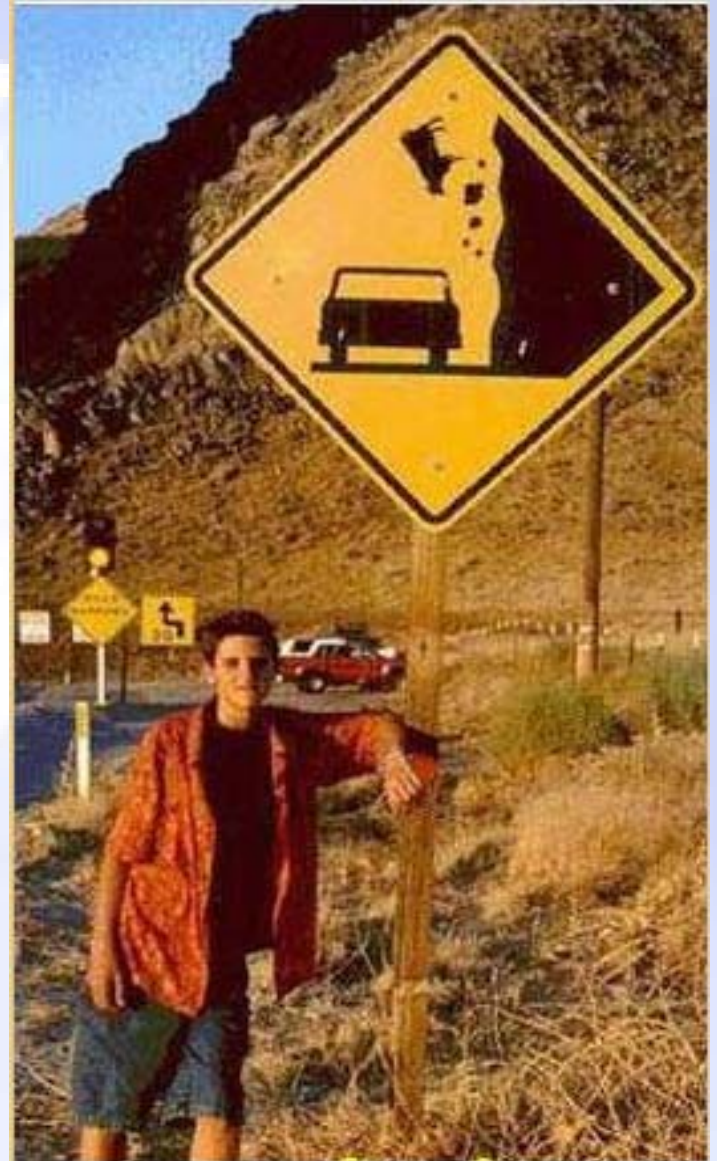


How do we find the existing problems?

- **Measure performance**
- **You can't control what you can't measure**
- **The cost of measurement must be matched to the desired benefits**

How do we improve processes?

**Some process
improvements
work better
than others!
(i.e. fence vrs sign)**



How do we improve processes?

- **Baseline performance**
- **Enterprise defect tracking process**
- **Past Issues Knowledge Base**
- **Documentation of processes**
- **Continuous process review**
- **Debriefing / lessons learned sessions**
- **Root Cause Analysis**
- **Customer feed back**
- **Training**

How do we improve processes? (cont)

- **Create a plan to improve processes**
- **Negotiate change**
- **Implement the plan**
- **Follow up**

**Policies, practices and procedures
commit the organization to implementing
and performing consistently.**

SEI Compatibility Maturity Model

What have we done to improve?

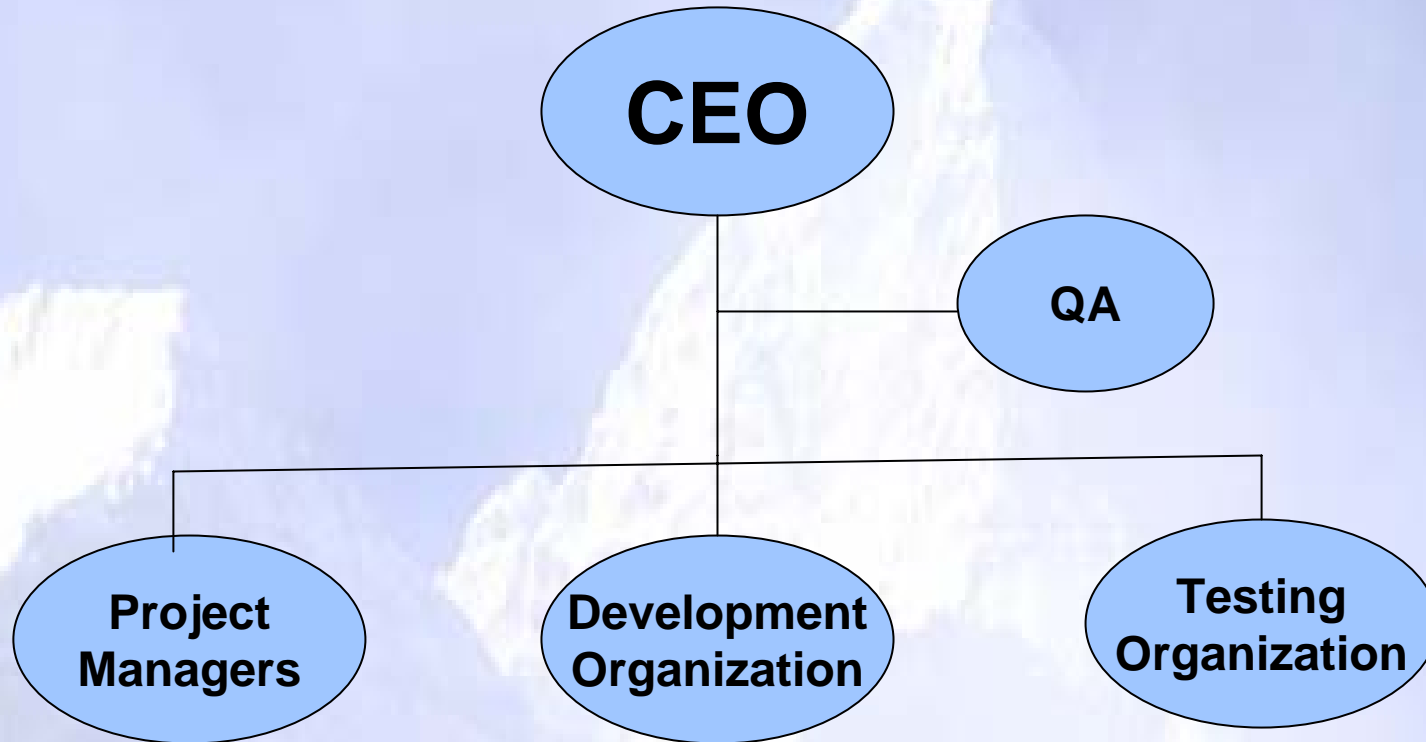
**Improving is a process
in and of itself - over time!**

What have we done to improve?

Just three of many examples:

- **Ideal Quality Assurance organization**
- **AD department QA Council**
- **Root Cause Analysis**

Ideal Quality Assurance Organization



Ideal Quality Assurance Organization (cont)

QA analysts are **Measurement Analysts**

- Get metrics from QC to create reports
- Make recommendations to management based on those reports
- Management makes risk decisions based on those recommendations

The responsibility to make changes still resides with the department manager.

Typical QA Council

Suggested Enterprise QA Organization

**Quality Assurance Council
(Dept Mngrs & COO)**

**Committee of
Managers**

**Staff Work Groups
From all
departments**

AD department QA Council (cont)

QA Council Duties:

- Executive level of management
- Develop QA plan (see attached template)
- Set goals
- Authorize projects
- Allocate resources
- Approve recommendations
- Review Progress
- Act on unresolved issues

AD department QA Council (cont)

Committee Manager Duties

- **Middle Management**
- **Set priorities**
- **Manage resources**
- **Administer project plans**
- **Champion for quality**
- **Communicate with Quality Council**
- **Manage work groups**

AD department QA Council (cont)

Work Group Duties:

- Define standards and procedures
- Analyze root cause of problems
- Propose solutions
- Build, review, improve processes
- Train other staff
- Champion continuous improvement

Root Cause Analysis

One of the main rolls of QA.

Figuring out what is really causing the situation to occur and remove it so the situation does not occur again

How can you further improve?

- **Analyze the results so far**
- **Make the AD QA project an enterprise function now**
- **Create a plan to chart where we go from here**

What are the risks?



What are the risks?

- When ever there is change there is always risk?
- Fixing one thing sometimes breaks something else.
- **EVALUATE THE COST AGAINST THE BENEFIT!**

Dealing with the Environment

Quality Control Perspective:

Don't fix what is not broken.

"Good Enough" is good enough.

Quality Assurance Perspective:

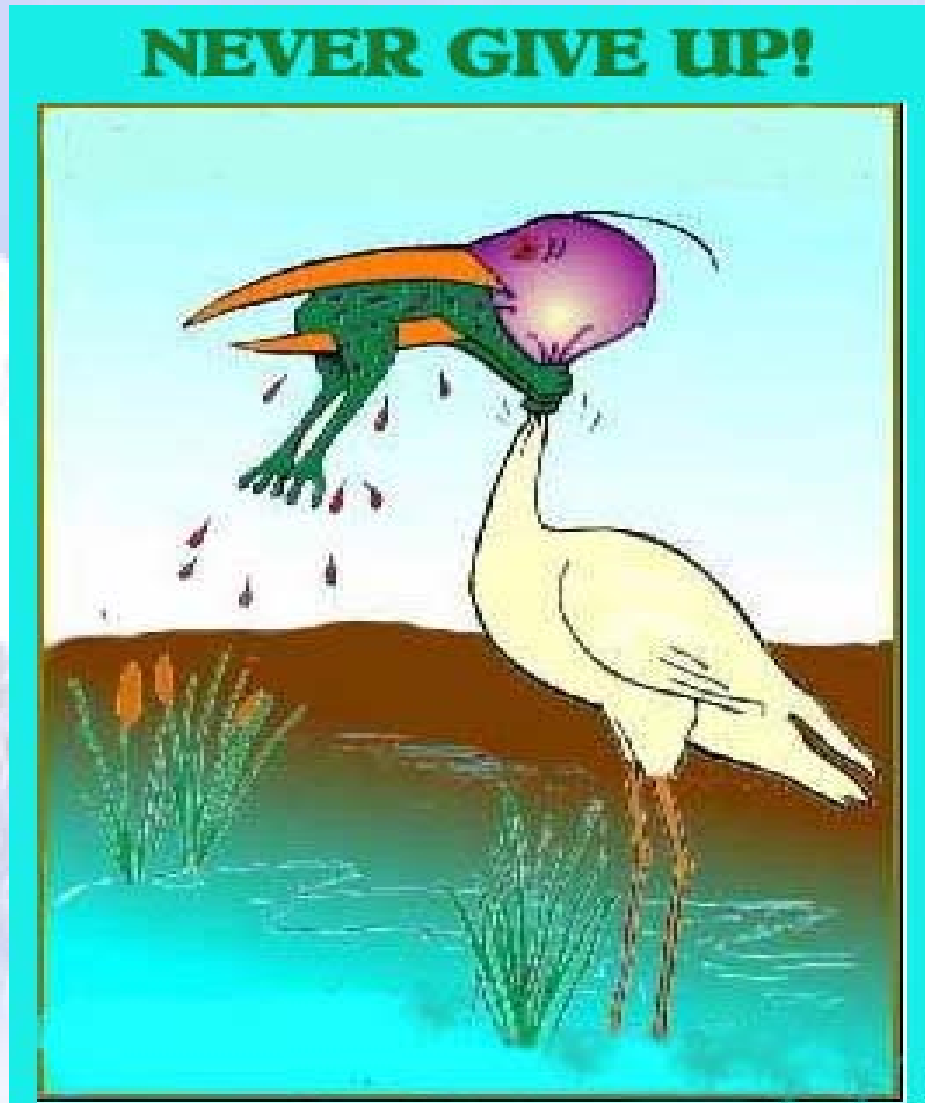
How can we do better?

Keep statistics to calculate costs.

Deal with resistance to change.

Never settle for just being good enough.

The QA Plan



**A good plan
will help in
every
situation!**

The steps to success:

- **Create the Quality Assurance Council**
- **Empower employees**
- **Be willing to implement change**
- **Departments help each other improve**
- **Continuous Process Improvement**

Mission Statement

FLAWLESS EXECUTION

- **Identify**
- **Evaluate root cause**
- **Document**
- **Improve process**
- **Implement**
- **Retrain**



Q & A

DISCUSSION