

# 2010 NASA PROJECT MANAGEMENT CHALLENGE

“How Configuration Management Helps Projects  
Innovate and Communicate”

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# HOW CONFIGURATION MANAGEMENT HELPS PROJECTS INNOVATE AND COMMUNICATE

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## Presentation outline:

- Compare Project Management (PM) and Configuration Management (CM) processes
- Compare Traditional CM with CM II approach
- Present two PM models:
  - Kepner-Tregoe
  - Deming (Shewhart)
- Describe why projects fail
- Present methods how CM helps projects innovate/communicate

# HOW CONFIGURATION MANAGEMENT HELPS PROJECTS INNOVATE AND COMMUNICATE

## PM process encompasses:

- Project Work Breakdown Structure (WBS)
- Time-phased project budget
- Detailed project schedules (deliverables and milestones)
- Create baselines for performance measurement
- Link schedules to budgets, resources and documents
- Track risks
- Track manpower resources and requirements
- Track and summarize multiple project data
- Schedule Gantt and PERT charts

Projects are composed of processes; a *process* is a series of actions bringing about a desired result.

Projects may fall into several major categories:

- *Process-oriented*
- *Product oriented*
- *Phased-oriented*
- *Resource-oriented*

*Whatever project is selected, the recording of performance standards, details, assumptions, etc. is necessary.*

***How does CM support the manager to meet the project's needs, goals, and objectives? Let's look at CM processes ...***

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## CM process encompasses:

- Information accessibility
- Information integrity
- Properly structured baselines
- Naming and numbering convention
- Traceability
- Metrics
- Interchangeability
- Recording and reporting information
- Assuring conformance to requirements

“There is an increasingly important need for speed in project delivery and the equally important need for reliability in delivering the project (product) as promised.”

-PMI 1999, Frank Patrick

*CM's role supports the project manager's processes, but how might this happen?*



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## Traditional CM Approach (EIA-649)

- Planning & Management
- Identification
- Change Management
- Status Accounting
- Verification & Audit

The traditional CM approach dissolves it's project effectiveness and limits the coordination and communication attributes among too few project entities

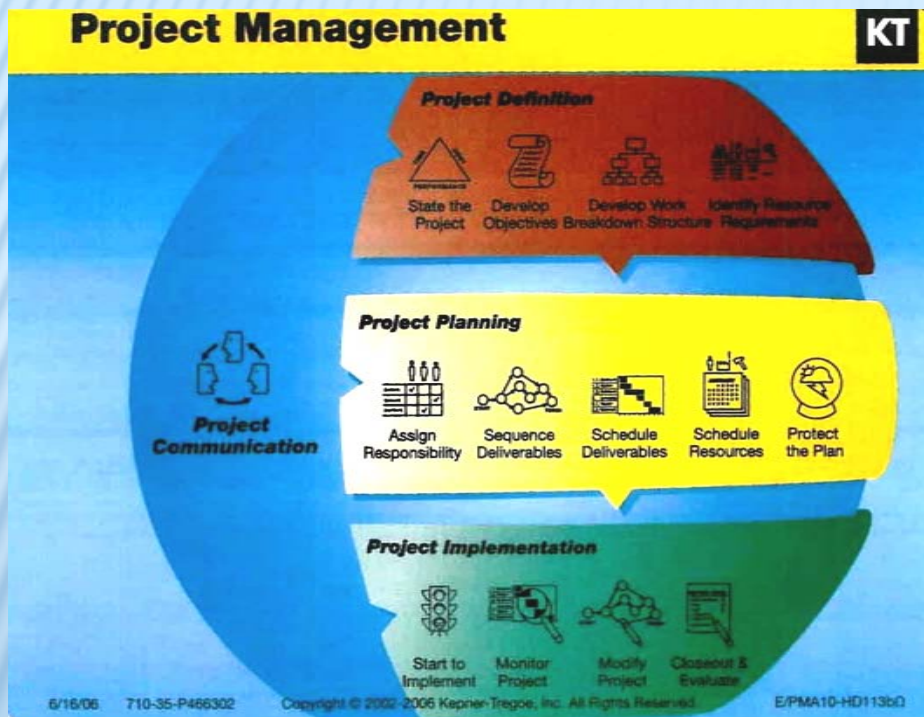
## Configuration Management II Approach

- Accommodating change
- Accommodating the reuse of standards and best practices
- Assuring all requirements are clear, concise, and valid
- Communicating 1-3 to each user promptly, and
- Assuring conformance in each case

CM II relies on an enterprise-wide, closed-loop change process with conformance to requirements that's not limited to a design definition process.

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*Project Management can be as detailed as the Kepner – Tregoe® model or ...*



KT® has an excellent PM model to meet task deadlines within schedule and/or cost constraints.

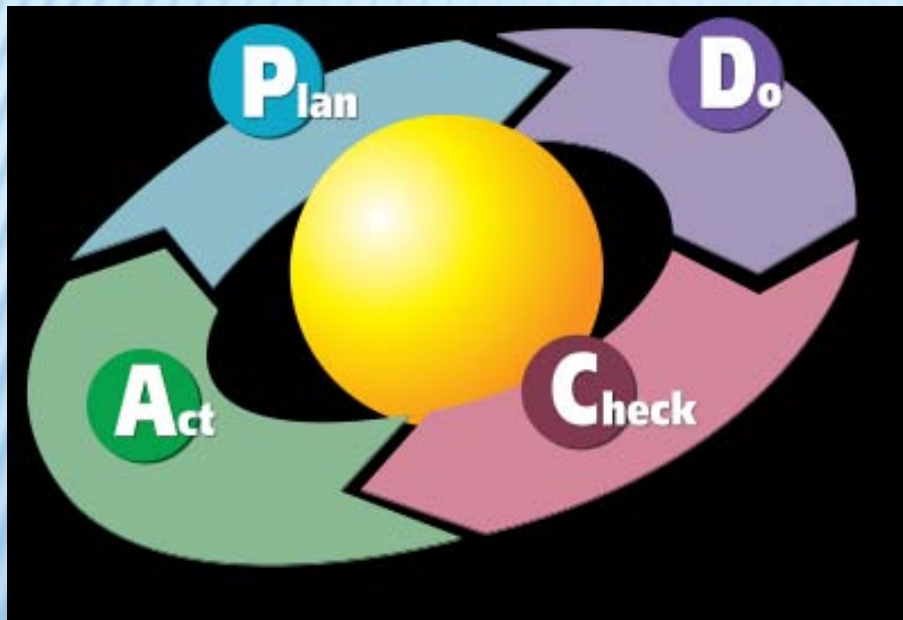
KT® PM process is divided into:

- Project Definition
- Project Planning
- Project Implementation

Project Communication coordinates all the processes.

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*Project Management can take a simple approach as the Deming (Shewhart)<sup>®</sup> Cycle (also called the PDC/SA model)*



W. Edwards Deming proposed processes that continuously analyze and measure product variations to identify any deviation from customer requirements.

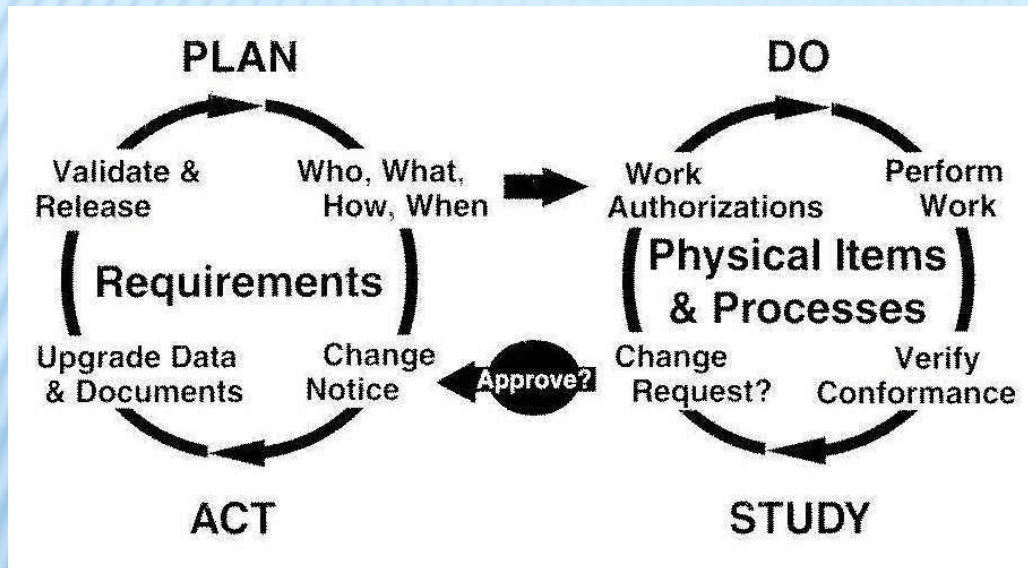
The Plan-Do-Check(or Study)-Act (PDC/SA) continuous feedback loop allows managers to identify and change the parts of the process that need improvement.

*CM expands Deming's single loop cycle into...*



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..... A dual cycle of the Deming (Shewhart)<sup>®</sup> Cycle



CM sees the PDC/SA cycle as a dual process with one cycle for requirements definition in concert with the other cycle on the as-planned physical items (project tasks).

Each cycle is interdependent and must be synchronized.

*But no plan or process is executed without issues or problems.*



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## So Why Do Projects Fail?

Given various models and processes for Project Management, what are the most pressing problems inherent with every project?

- Cost overrides
- Late delivery of goods/supplies/product
- Late completion of task along the critical path

But might these problems be a result and not the causative factors? Perhaps the underlying causes might really be –

Poor communication among leadership, stakeholders, and staff

Poor (or incomplete) project requirements

No change control process

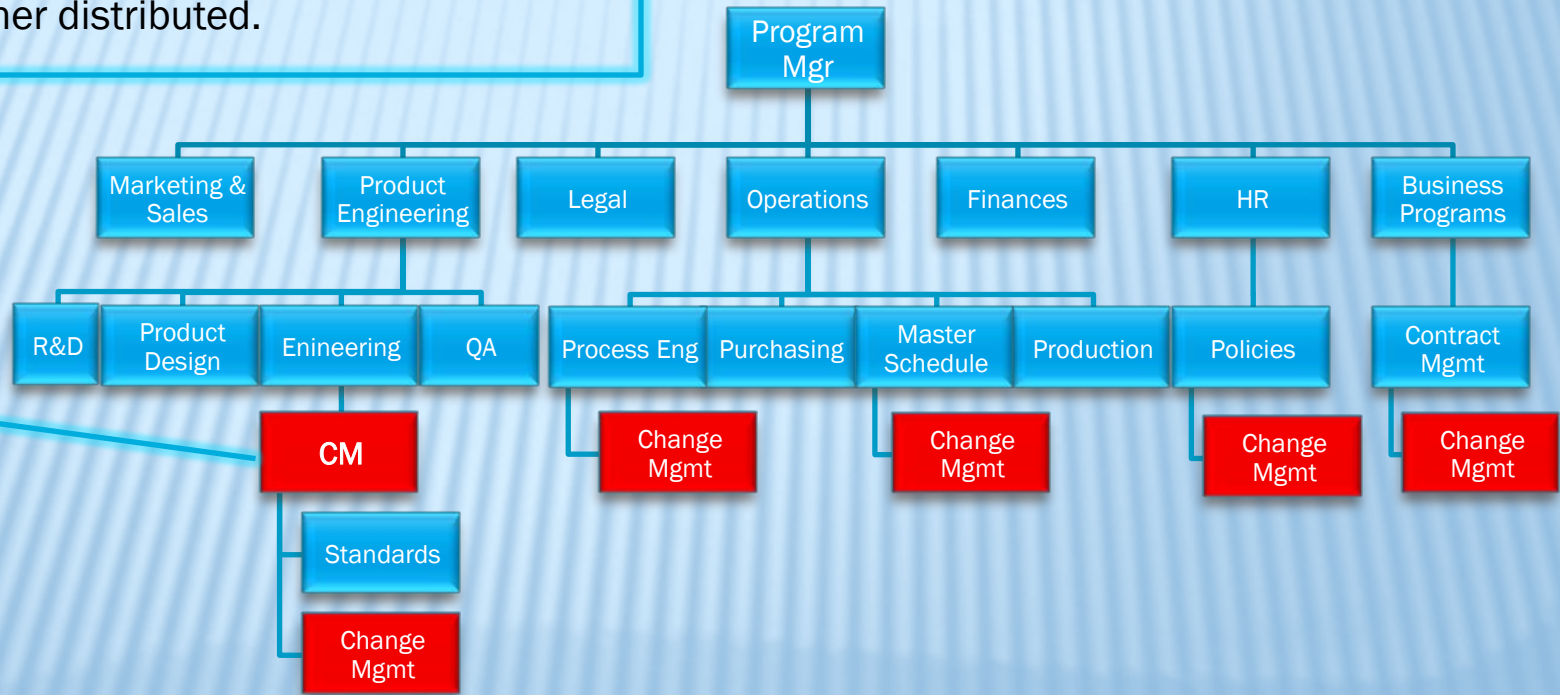
Poor documentation or data management

Lack of resources or mismatched skills

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## Another Reason Projects Falter!

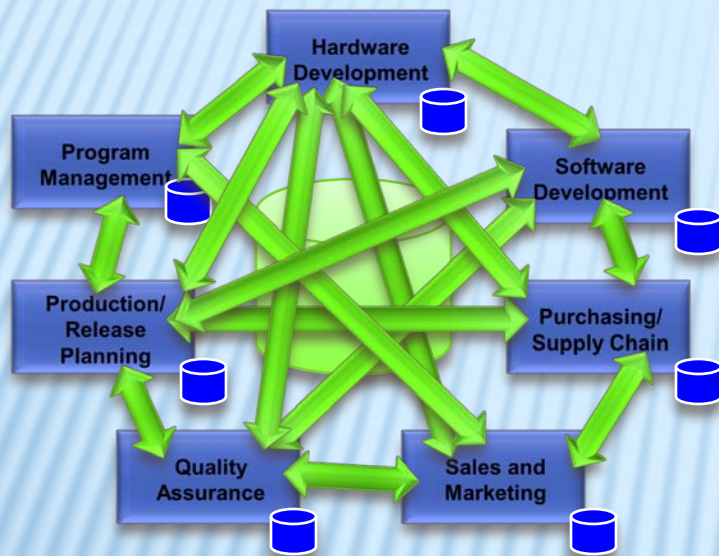
Typically, CM is embedded lower in organizations (usually under an Engineering function) with additional change management activities even further distributed.



*“The only time you don’t want to fail is the last time you try!”*  
- Charles F. Kettering

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Which communication process would you rather have?



**Decentralized communication**

Many “dialects”  
Many processes



**Centralized communication**

“Everybody speaks the same language”  
Single process

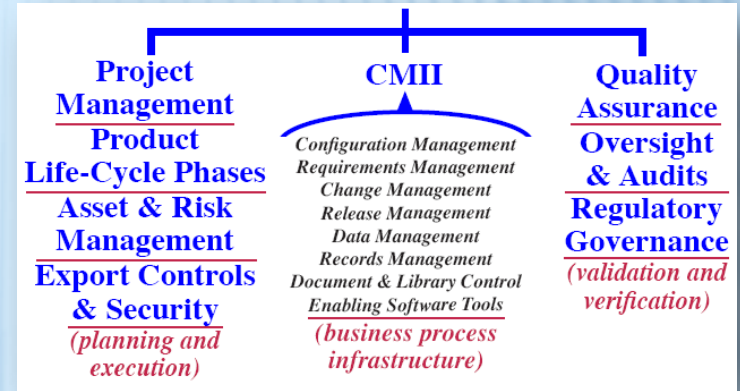
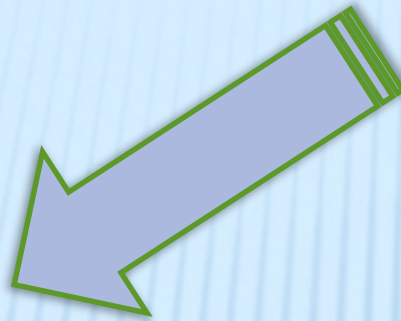
Here’s where CM can help!



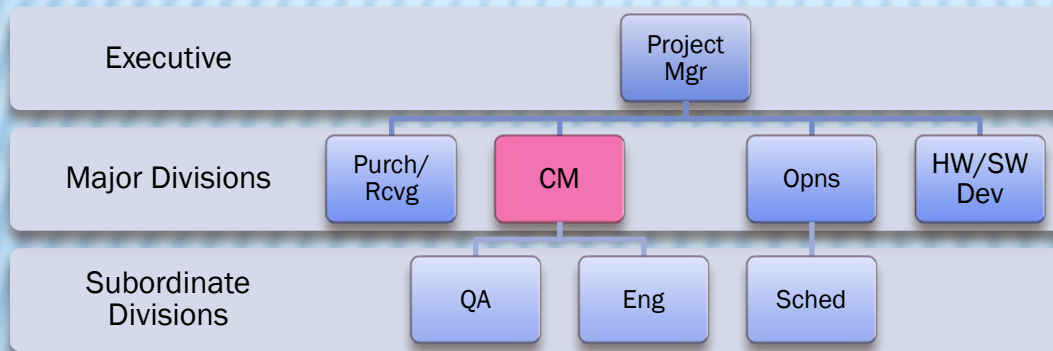
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Three CM methods that help projects to innovate and communicate:

1. Innovate by raising CM to the management level of the project or Work Breakdown Structure (WBS)

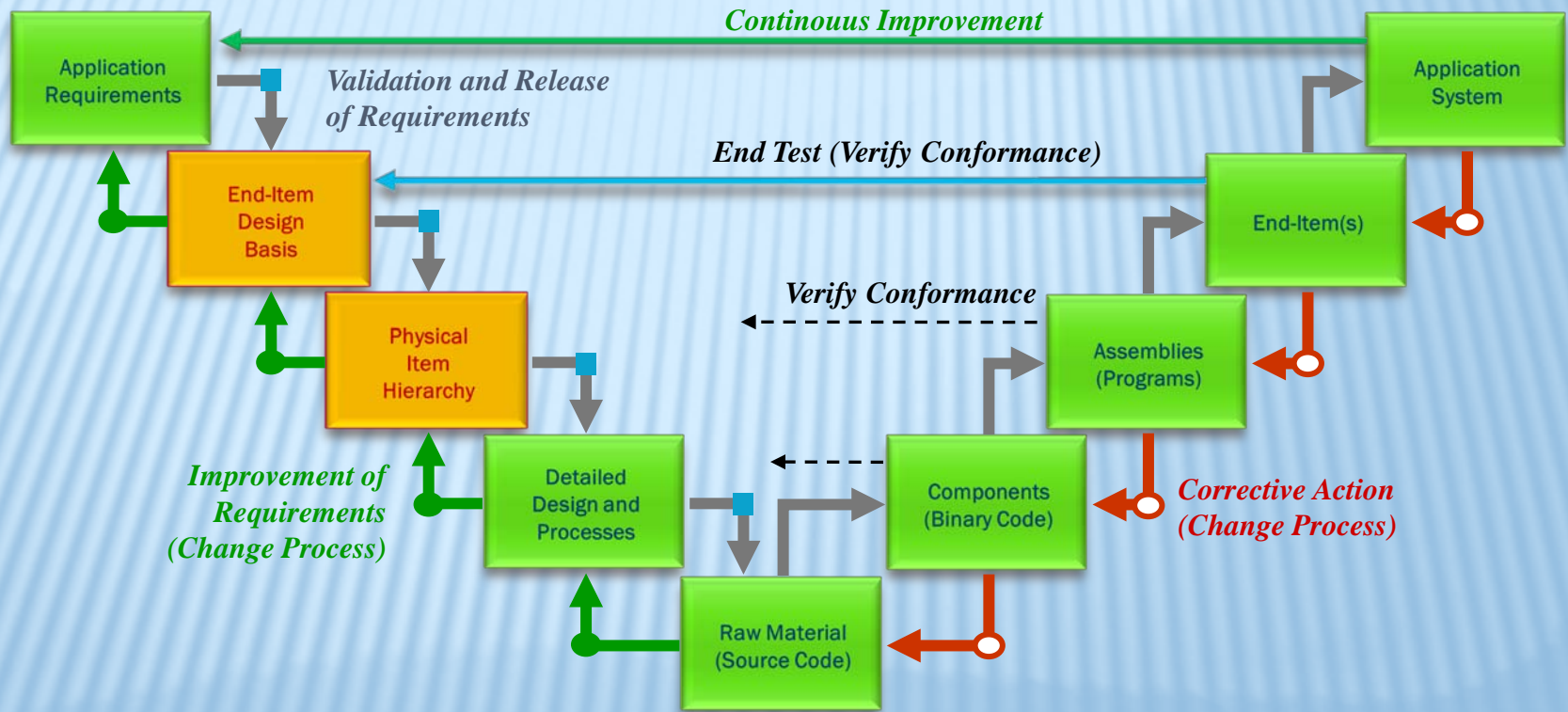


CM II's "Umbrella Coverage" provides an integrated infrastructure that's currently missing from a traditional CM model.



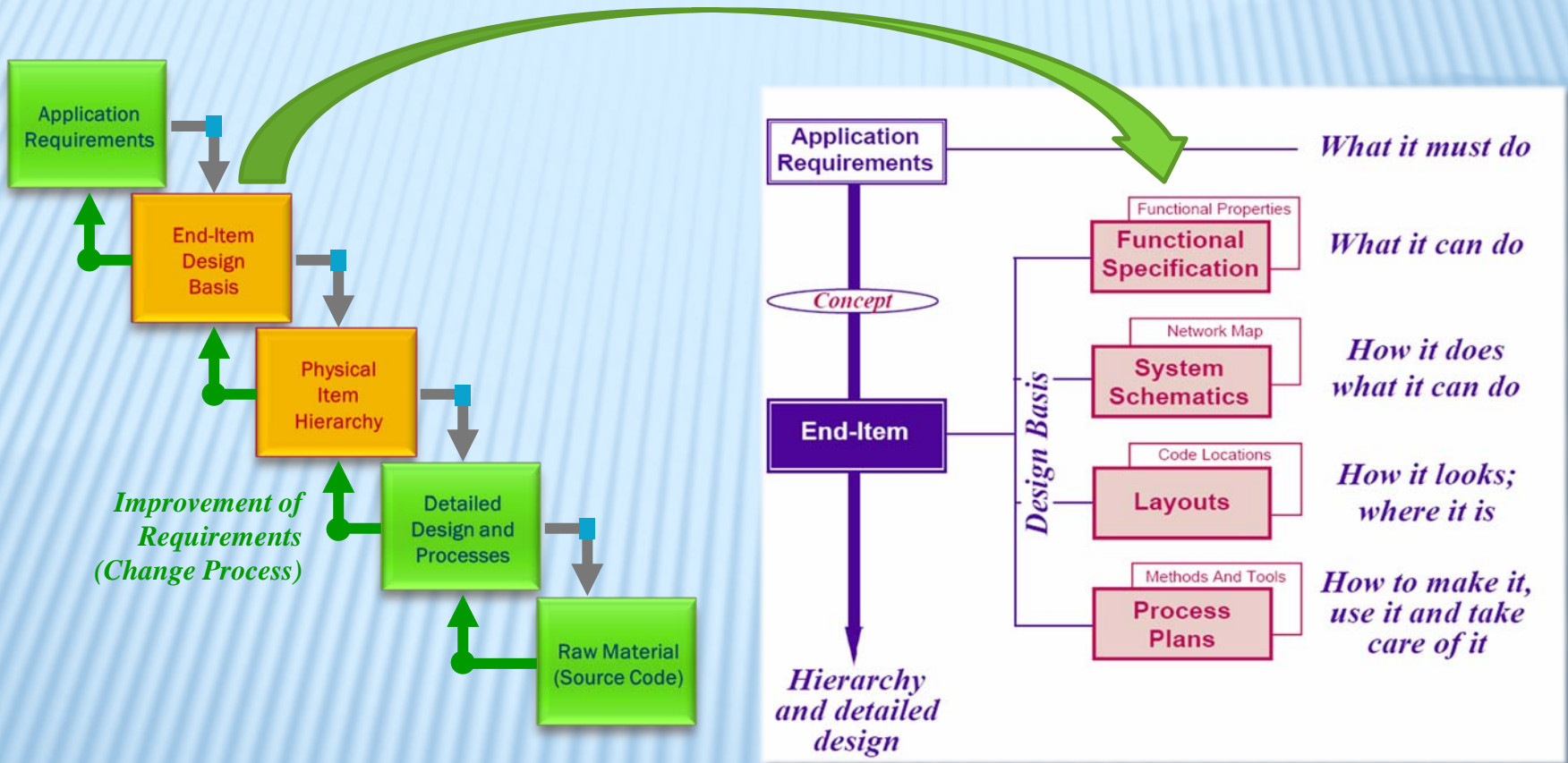
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2. Change documents first using a consistent change process for any baseline. Requirements drive the document before the physical item must conform.



How does the Project Manager communicate customer/product requirements, its changes, and potential cost/schedule impacts?

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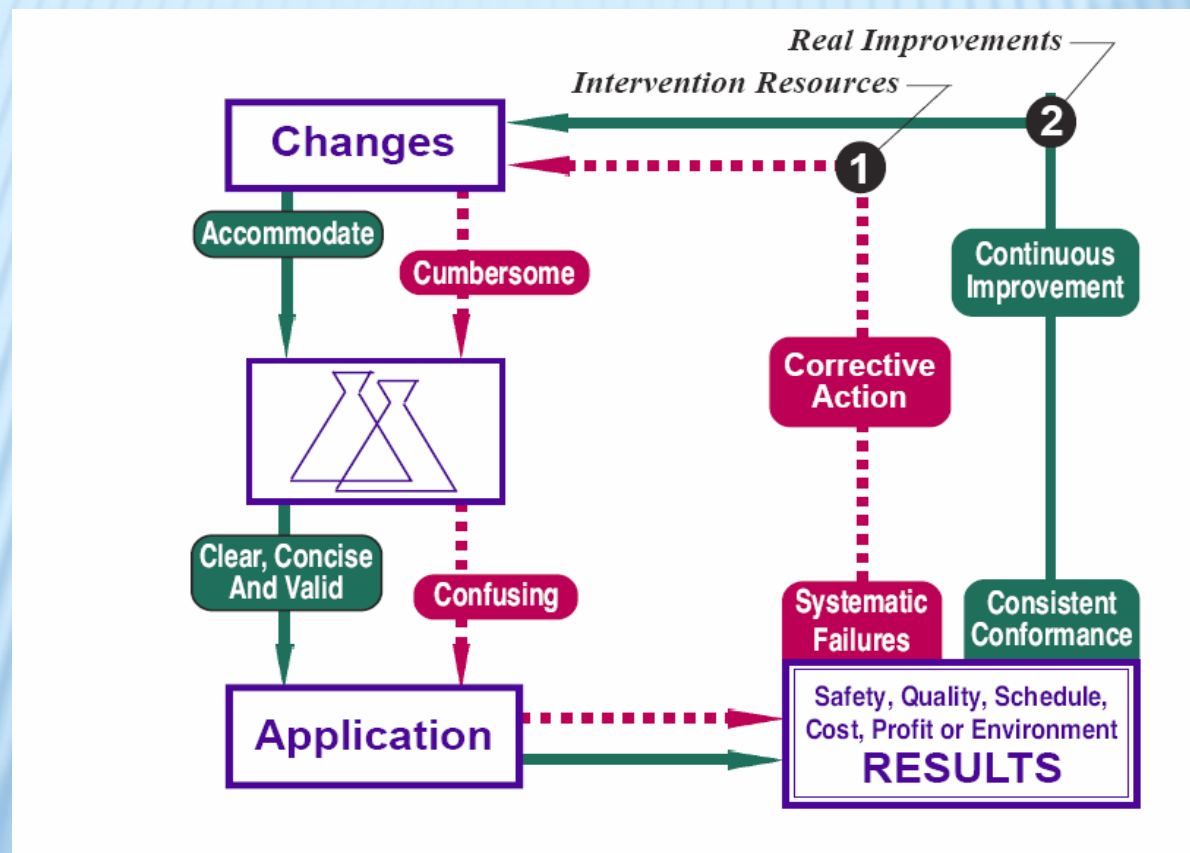


End-item Design Basics are developed concurrently and represent high level views of what the product is and what it can do.



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3. Reduce corrective actions (intervention resources) that would normally affect 40% - 60% of resources through CM's closed-loop change process. Change happens!



# HOW CONFIGURATION MANAGEMENT HELPS PROJECTS INNOVATE AND COMMUNICATE

CM helps projects Innovate and Communicate by ...

Raise CM to management level

Change documents first!

Eliminate/reduce corrective actions

Project success

CM is not only highly process-oriented; it is a process for communicating requirements, accommodating change, and minimizing corrective actions!

# HOW CONFIGURATION MANAGEMENT HELPS PROJECTS INNOVATE AND COMMUNICATE

Whatever PM tool model is used, CM can positively impact a project's success.



Project performance (schedule, quality, and cost) can be no better than the ability to communicate requirements which, in turn, is no better than the CM process to communicate project decisions and the correct requirements.

“For those who believe, no proof is necessary.  
For those who don't believe, no proof is possible”  
- Stuart Chase