Message Over Medium:

Communication Loops in the CMMI
Elements of Communication
Elements of Communication

context

Sender

media

“ping”
acknowledge/non-acknowledge

Receiver

context
Elements of Communication

- **Sender**
  - Encoding
  - Media

- **Message**
  - Media

- **Receiver**
  - Decoding
  - Processing
  - Meaning

- Context
Elements of Communication

Sender Encoding Message Decoding

"ping" acknowledge/non-acknowledge

media

context context

Processing Meaning
Elements Summary

- Sender
- Receiver
- “Handshaking”
- Medium
- Message
- Contexts
- Meaning
Noise via Overload

- Unfiltered communication
- Environmental factors
- Input Selection challenges
Noise via Distortion

- Medium unreliability distorts or redacts
- Faulty encoding/decoding
- Context mismatch
- Synchronization issues
Noise via Mixed Messages

Mixed Messages
Noise Summary

- Overload

- Distortion
  - Medium unreliability
  - Faulty encoding/decoding
  - Context mismatch
  - Synchronization issues

- Mixed Messages
Communication Loops in The Generic Practices
Loop – Policy and Reporting

Policy - GP 2.1

Reporting - GP 2.10
Policy and Reporting - SEPG

Management

Policy - GP 2.1

Reporting – GP 2.10

Process Group
Loop – Planning and Performance

Management

Policy - GP 2.2

Performance – GP 2.8

Projects
Process Communication

- Process Assets - GP 3.1
- Data - GP 3.2

Process Group

Projects
Multi-Level Communication

Management

Policy - GP 2.1
Message

Response

Reporting - GP 2.10

Process Group

Data - GP 3.2
Response

Process Assets
- GP 3.1, 2.5
Message

Response

Data - GP 3.2

Projects
Objective Evaluation

Management

Policy - GP 2.1

PPQA

Data - GP 2.8

Projects

Evaluate – GP 2.9
Adherence Management Projects

- Reporting* – GP 2.10
- Address non-compliance* – GP 2.9b

* Encoding involves translation
Reporting Management Projects

Process Group

PPQA

Policy

Findings

Data

Evaluate

Assets, metrics, training

Feedback
Skills and Responsibilities

Assign Responsibility – GP 2.4
Training - GP 2.5
Performance - GP 2.8

Project Management

Project Members
Stakeholders

Project Management

Involve Stakeholders – GP 2.7

Project Members

Functional Groups, Customers, & Others

Involve Stakeholders – GP 2.7
Tools and Resources

Project Management

Resources - GP 2.3
Performance - GP 2.8

Project Management

Resources - GP 2.3
Performance - GP 2.8

Project Management

Resources - GP 2.3
Performance - GP 2.8

Project Management
Specific Practices
(Very Briefly)
Specific Practice Examples

- DAR.SP1.6 Select Solutions “Document and communicate to relevant stakeholders the results and rationale for the recommended solution.”
- IPM.SP2.3 Resolve Coordination Issues “Communicate issues to relevant stakeholders.”
- MA.SP1.4 Specify how measurement data are analyzed and communicated; SP2.4 Communicate Results
- OPF.SP3.1 “…deployment of process assets include…identifying how changes to organizational process assets are communicated.”
- OPM.SP1.1 “quality and process performance objectives may need to be created or maintained and re-communicated.”
- PMC.SP.3.1 Monitor Project Risks “Communicate the risk status to relevant stakeholders.”
- PPQA.SP.2.1 Communicate and Resolve Noncompliance Issues
- RD.SP.3.2 Establish a Definition of Required Functionality and Quality Attributes “This functional description…communicates the manner in which the product will be used.”
Insights and Issues
Communications and Maturity Levels

1
2
3
4
5
Issues with CMMI Application

Typical Noisy Errors
- Confusing the model with process
- Neglecting the bottom line
- Compartmentalization of improvement efforts
- Maturity Level Mandates

Common consequence: inability to measure and discuss impact of changes (empty communication)

Usual Outcome: using the documentation (medium) as indicators of success
How Issues Arise

- Encoding, decoding, context issues often are intangible
- The medium is tangible and attracts attention
- The “medium over message” syndrome surfaces
- Focusing on the medium can aggravate noise issues, resulting in a vicious cycle
Solution: Focus on Communication

- The model implies all components of communication loops
- The model doesn’t tell us specifically what we should say
- The model does indicate what we should be able to communicate about
  - Model as prescriptive method => noise
  - Model as diagnostic => real communication loops
The CMMI describes communications, both explicitly and by implication.

Media is a critical element, but not the only one.

The media serves the messages in communication.

Improper focus on the media may distort or completely subvert the message.

Understanding complete communication loops and how the CMMI relates to them preserves the critical messages.