SOFTWARE
PRODUCTIVITY
CONSORTIUM

CMMI® and Process Deployment to New Disciplines

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EIA/IS 731*

SW-CMM

IPD-CMM**

CMMI

- **SE and SW often had stovepipe approach prior to CMMI**

- **CMMI Initially seen as common model for SE and SW**

- **CMMI lead to integration of efforts**
  - **SE is often just starting process maturity**

- **Combination created "critical mass" leading to addition of others**
  - **Program management**
  - **Hardware**

* EIA/IS 731 = Electronic Industries Affiliates Interim Standard 731, Systems Engineering Capability Model (Electronic Industries Affiliates 1999)

** IPD-CMM=Integrated Product Development Capability Maturity Model® (Enterprise Process Improvement Collaboration 1996)
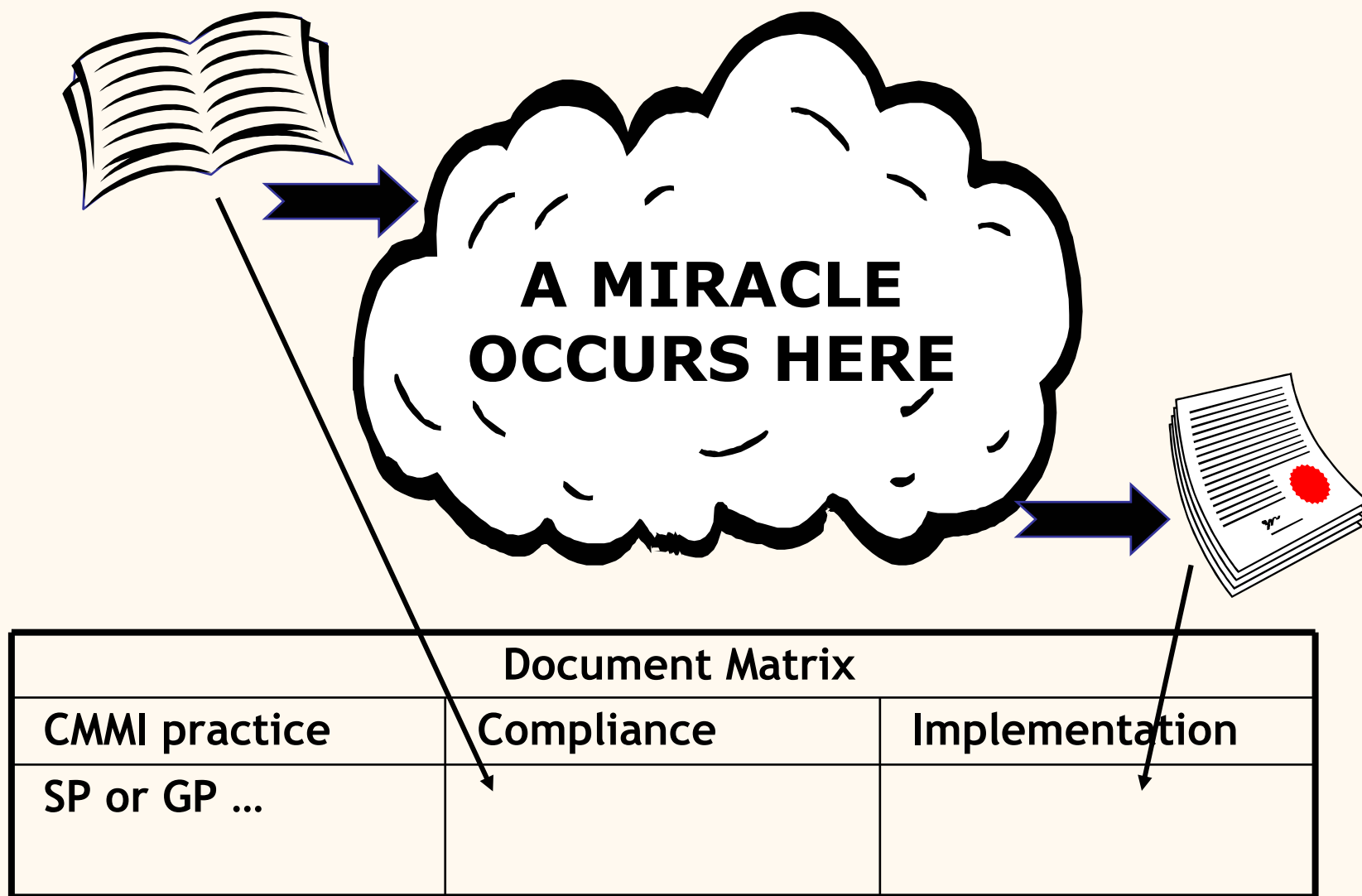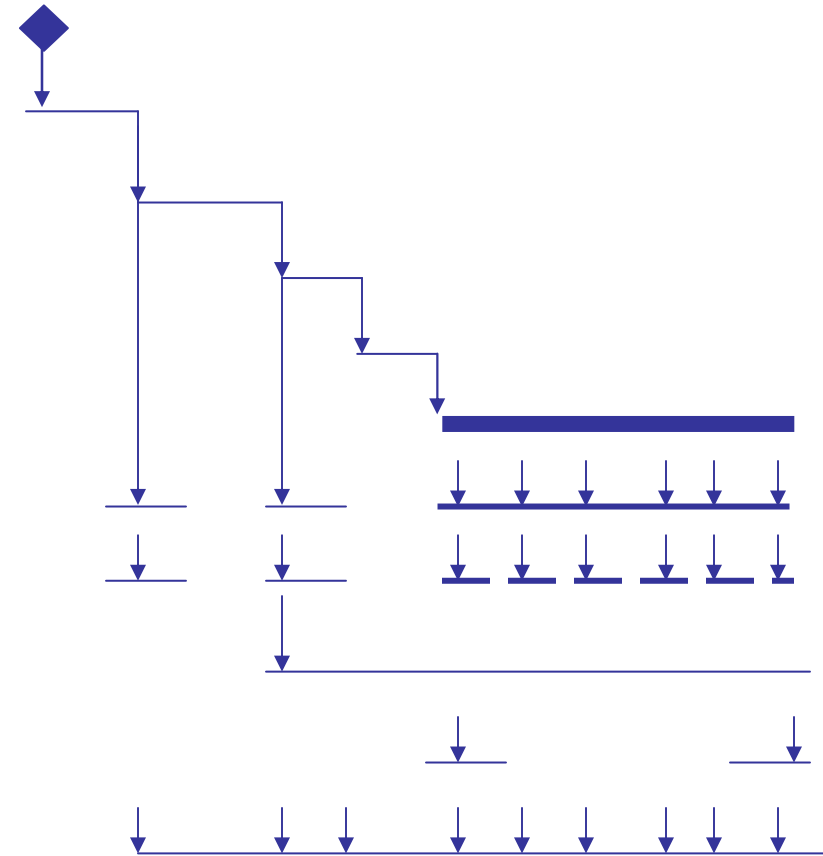
Compliance Matrix

A MIRACLE OCCURS HERE

Document Matrix		
CMMI practice	Compliance	Implementation
SP or GP …		

Figure 1. Compliance Matrix Approach

Process Deployment

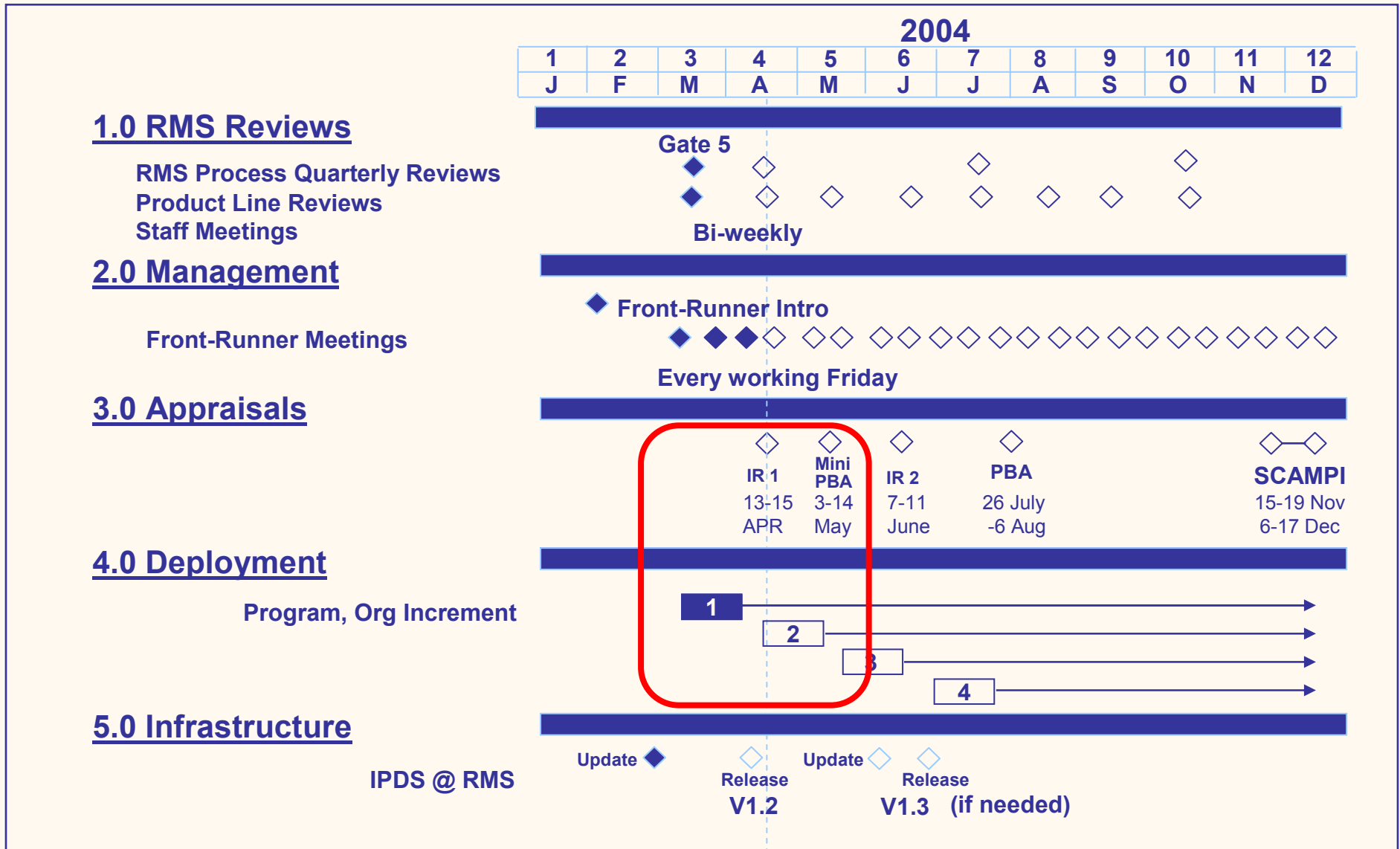| To Deploy a Process Instance		
Tasks	**Reference**	
	Process	**GP**
Input Process	**Process X**	**3.1, 2.1**
Tailor	**Process**	**3.1**
Plan	**Process**	**2.2 +**
Resource	**Process**	**2.3, 4**
Train	**Process**	**2.5**
Execute	**Process**	**3.1**
QA/Peer Review	**Process**	**2.9**
CM	**Process**	**2.6**
Mon/Control	**Process**	**2.8, 2.7**
Review w/ Mgt	**Process**	**2.10**
Collect Artifacts	**Process**	**3.2**

4

Application

Raytheon Missile Systems

- **Level 3 CMMI**

- **Over 10,000 employees including 6,000 engineering**

- **Full program application and organizational involvement**
  - **Sponsorship at top of organization**
  - **Program Management owns planning processes, etc.**

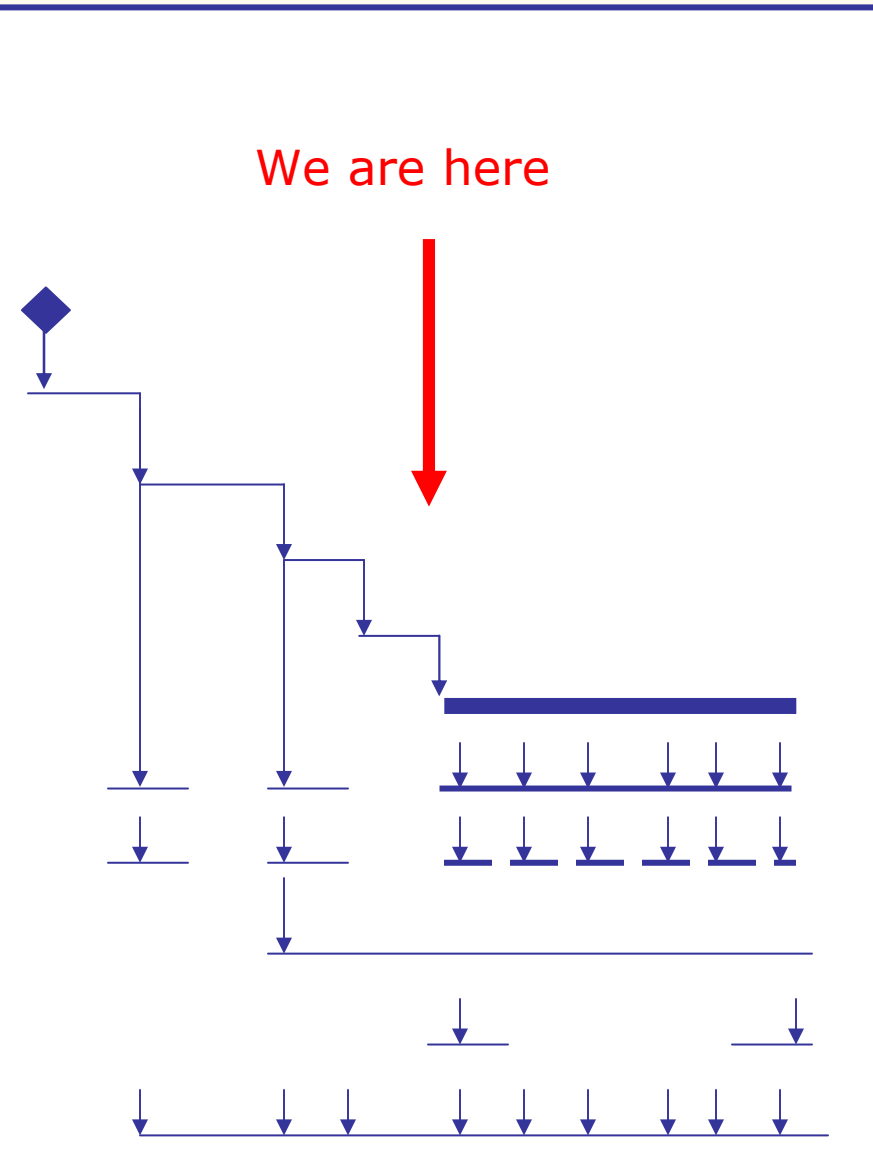- **Only software has prior CMM experience**

Deployment Schedule

2004

1	2	3	4	5	6	7	8	9	10	11	12
J	F	M	A	M	J	J	A	S	O	N	D

1.0 RMS Reviews

RMS Process Quarterly Reviews
Product Line Reviews
Staff Meetings

Gate 5

Bi-weekly

2.0 Management

◆ Front-Runner Intro

Front-Runner Meetings

Every working Friday

3.0 Appraisals

IR 1	Mini PBA	IR 2	PBA	SCAMPI
13-15 APR	3-14 May	7-11 June	26 July -6 Aug	15-19 Nov 6-17 Dec

4.0 Deployment

Program, Org Increment

1
2
3
4

5.0 Infrastructure

IPDS @ RMS

Update ◆   Update ◇   ◇

Release   Release
V1.2   V1.3 (if needed)

6

First Mini-Appraisal

To Deploy a Process Instance		
Tasks	**Reference**	
	Process	**GP**
Input Process	**Process X**	**3.1, 2.1**
Tailor	**Process**	**3.1**
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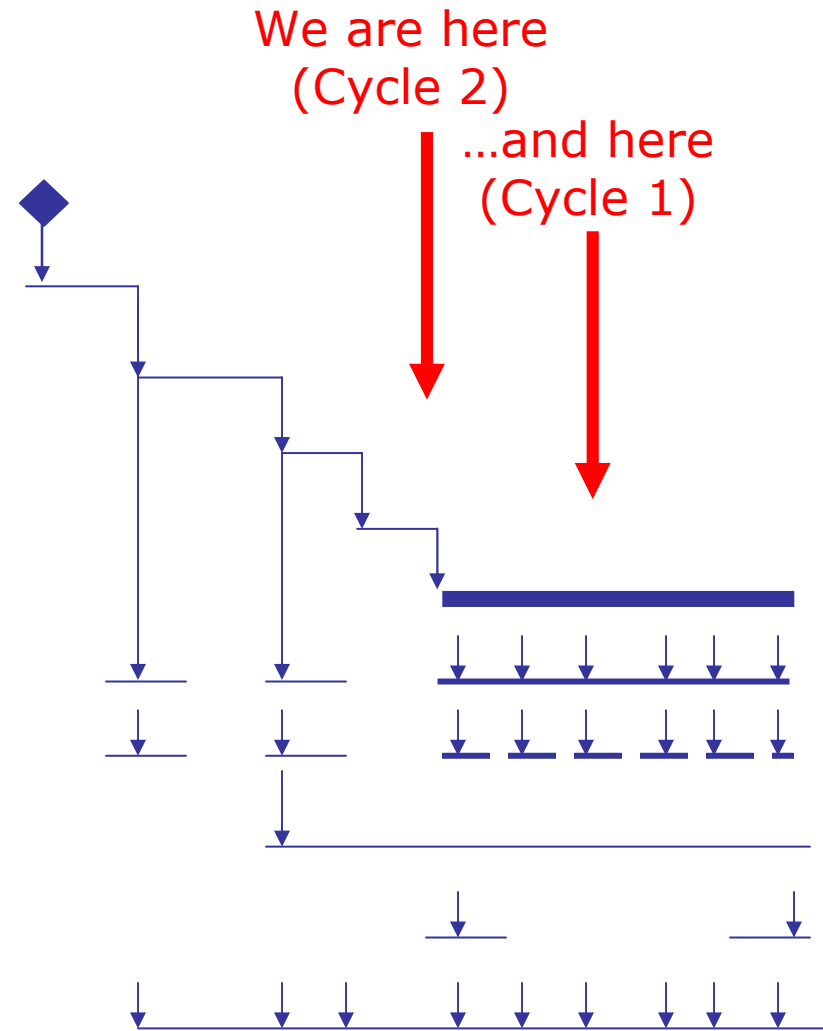We are here

7

Review Objectives

- **Is Deployment Cycle 1 prepared to proceed with implementation**

- **For the PAs in Cycle 1,**
  - **is the planned stuff present**
  - **Are there any content issues**
    - **IPDS@RMS**
    - **CMMI**

- **General observations**
  - **Review difficulties due to multiple cycles**
  - **Risks/Suggestions**

9

Second Mini-Appraisal

To Deploy a Process Instance		
Tasks	Reference	
	Process	GP
Input Process	Process X	3.1, 2.1
Tailor	Process	3.1
Plan	Process	2.2 +
Resource	Process	2.3, 4
Train	Process	2.5
Execute	Process	3.1
QA/Peer Review	Process	2.9
CM	Process	2.6
Mon/Control	Process	2.8, 2.7
Review w/ Mgt	Process	2.10
Collect Artifacts	Process	3.2

We are here
(Cycle 2)

…and here
(Cycle 1)

10

Results

Deployment application

- Approach used in many instances to explain process use
- Non-"process geeks" can understand

Mini-Appraisal application

- Successfully identified issues with deployment early
  – Tailoring, planning, training
- Defined and tracked fixes to closure before implementation problems occurred
- Supported "real time" monitor and control of progress
- Leading to a low risk SCAMPI

Summary

- **New disciplines are being added to CMMI users**

- **Many do not have process discipline**

- **"A miracle occurs here" approach doesn't work**

- **Structured approach based on generic processes does**
  - **Helps process deployment**
  - **Helps early appraisals**