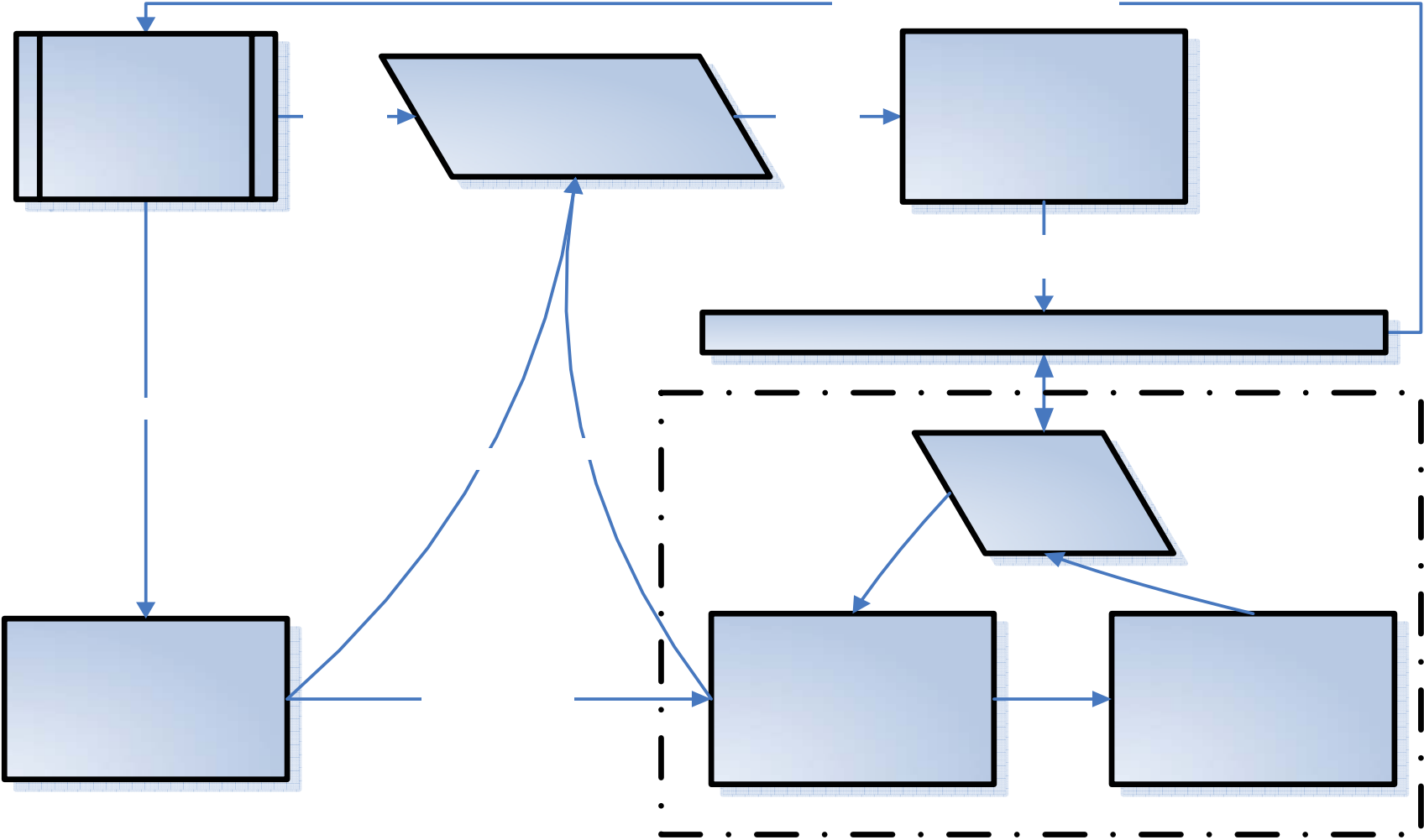


# Operations and Maintenance – Not Just a Scaling Issue

Laurence Gill



# Operations and Maintenance Environment



# Challenges Facing O&M Projects - 1

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- ◆ Supported applications are already developed and fielded
- ◆ Real time environment
  - Releases are typically added to a live system
- ◆ Typically part of multi-contractor team
  - May need to acquire some of the original developers
- ◆ 24-7 operation (actual or virtual)
- ◆ Responsible for overall system performance via Service Level Agreements
- ◆ High variability in workload
  - Help Desk Functions
  - Preventative Maintenance
  - Testing
  - Development
  - Release Management

## Challenges Facing O&M Projects - 2

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- ◆ There are few, if any, recognizable development activities that the organization controls that map to all of the engineering practices in the CMMI model
- ◆ Customer owns process
  - Contractors may be able to influence the process
  - Customer controls changes to the process
  - Customer owns tools that support the process

# Breakthroughs

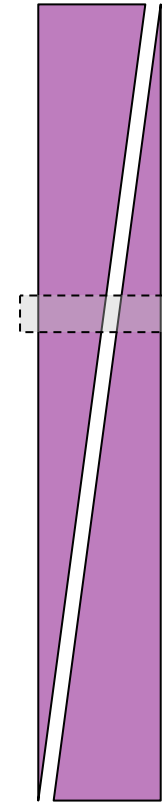
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- ◆ Classic engineering is not a prime focus
  - Tier 1 help desk tickets are often administrative or training
  - System problems get fixed immediately
  - Content of releases is less critical than implementation into live environment
- ◆ Most O&M contracts are Level of Effort (LOE)
  - Changes to the customer system operate differently
  - Work force is pre-determined; requirements are based on size of team
  - Schedule needs to adjust to the world of the application or network
- ◆ Many processes are performed at two levels
  - Project management exists for the O&M contract and the specific customer application
  - Support processes support the contract artifacts and the application environment
- ◆ Two projects exist – ours and the one we perform for the customer

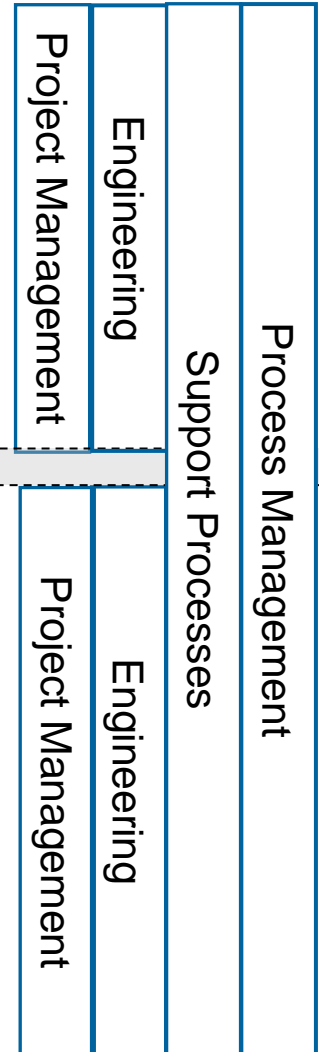
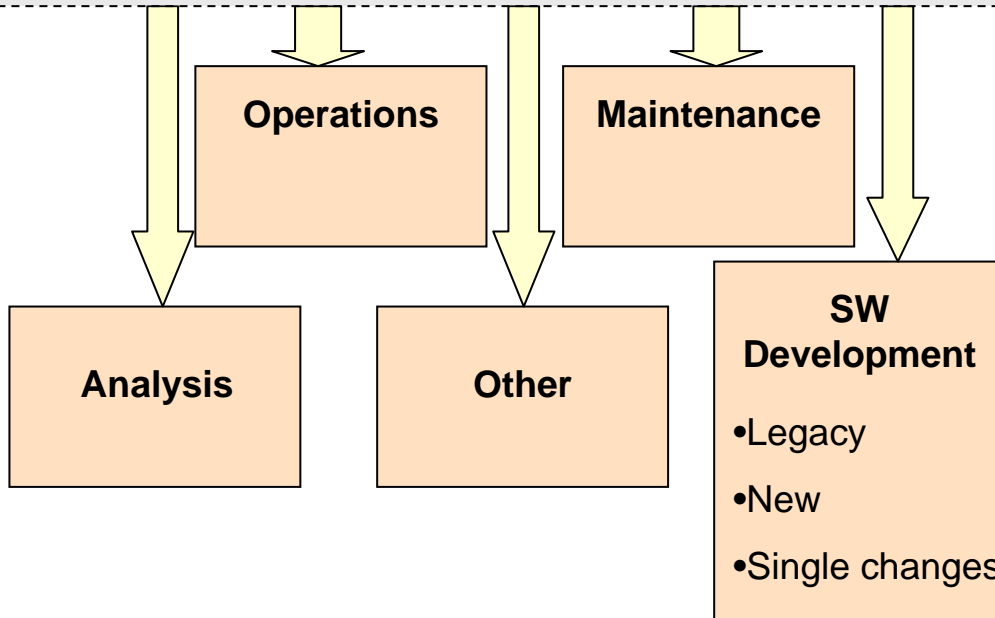
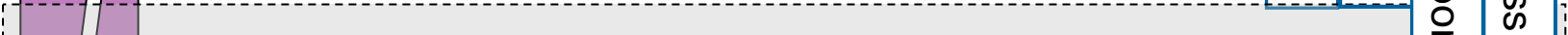
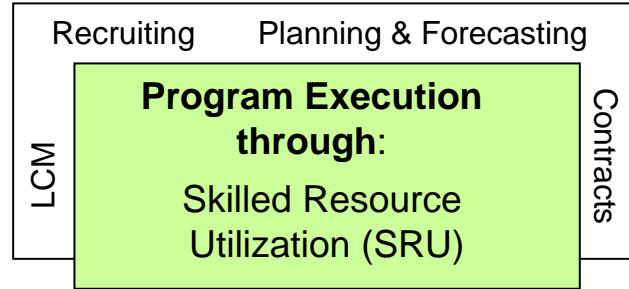
# Framework for Implementing CMMI

## Process Control

Contractor

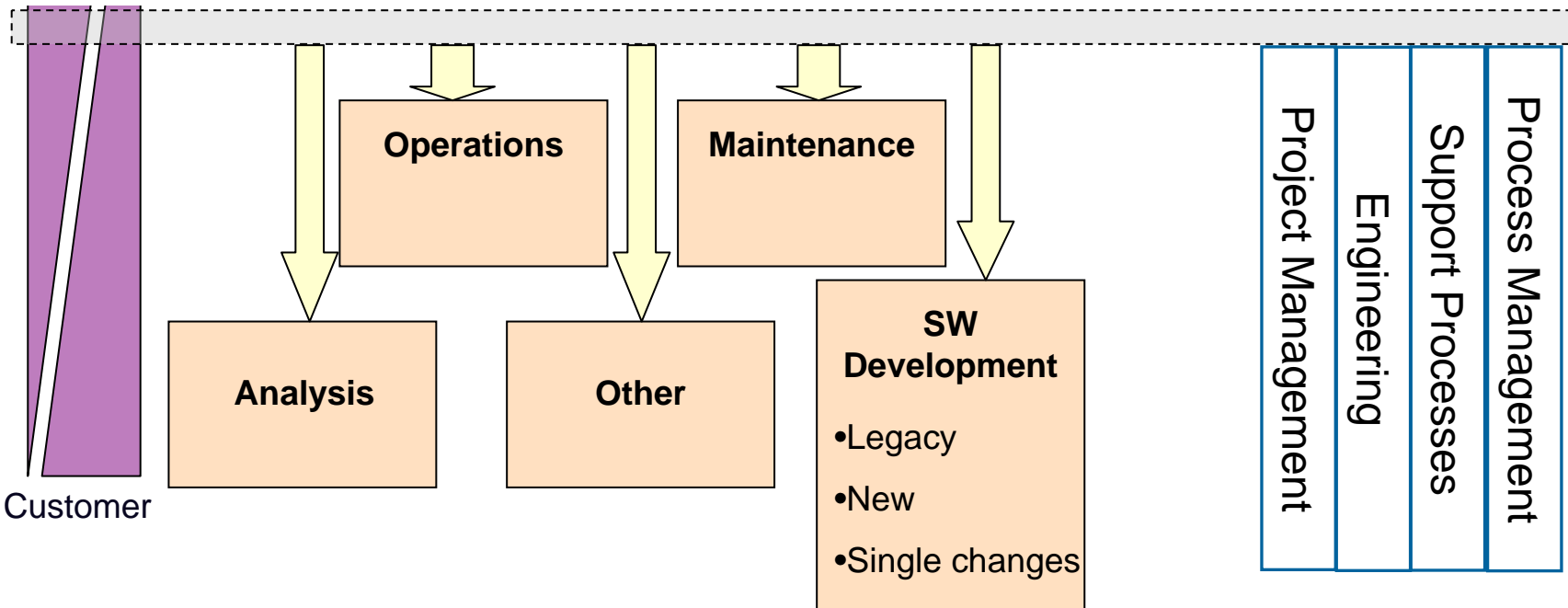


Customer

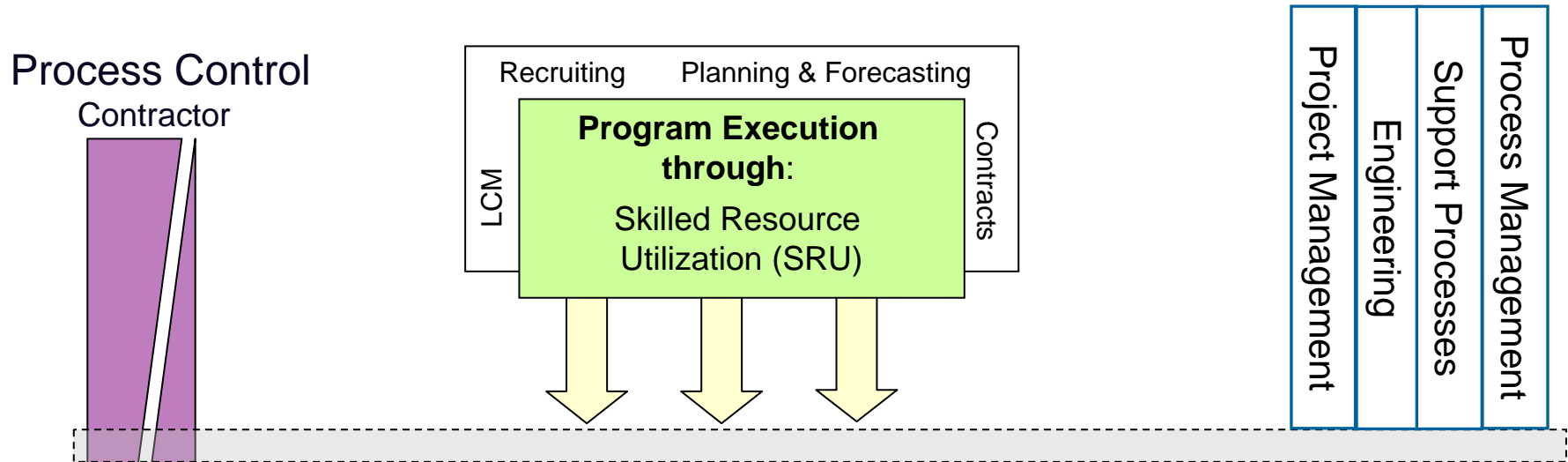


# Framework for Implementing CMMI - Below the Line

- ◆ Operations and Maintenance activities occur below the line
- ◆ Work performed at customer direction performs similar processes but for different purposes
- ◆ Validation determines whether the work we perform below the line meets customer expectations



# Framework for Implementing CMMI - Above the Line



- ◆ The products being provided are resources capable of performing the work below the line
- ◆ All of the CMMI Process Areas are applicable above the line
  - People are products; Systems are the resources we provide (staff and supporting non-staff)
  - Verification is against the requirements of the contract – not the verification activities performed for the customer
- ◆ Processes above the lines are under our control

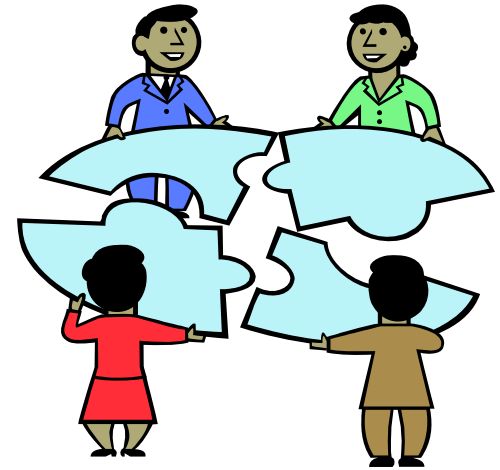


## Above the Line Processes

<b><u>SRU Process</u></b>	<b><u>Process Description</u></b>
<b>Define the Work (DTW)</b>	Identify customer needs and expectations and define project requirements.
<b>Design the Staffing (DTS)</b>	Develop a resource solution that will address the requirements of the contract and the expectations of the customer – with an understanding of a real-time variable-workload environment using LOE resources.
<b>Define Project Approach (DPA)</b>	Develop plans and processes to be used to manage the resources provided to the customer.
<b>Fill the Position (FTP)</b>	Acquire the staff and non-staff supporting resources to perform the services.
<b>Monitor the Project (MP)</b>	Manage the requirements of the project.

# Implications to the Business

- ◆ Create breadth versus depth in staffing solution – virtual workforce
- ◆ Have to know best practices for below the line – influence
- ◆ Leading indicators to performance
  - Key performance indicators for staffing
  - Cannot ignore leading indicators for SLAs
- ◆ Develop multiple alternatives to provide services and select the one that best addresses the contract and environment
- ◆ Understanding what is required below the line is key to success above the line



# Summary

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- ◆ With our business-tailored interpretation of the CMMI we were able to apply best practices to the entire project, not just small bundled releases
- ◆ We were able to identify the O&M environmental challenges and develop a business solution that can be applied to our entire enterprise
  - Organizational standardization of processes
  - Project's defined process
- ◆ By separating the tasks we control from those that we don't, we were able to develop a better framework for implementing the best practices using the CMMI
- ◆ The processes developed mirror our business
- ◆ For more information about the implementation of the engineering process areas, join Kathy King tomorrow for the Engineering in a Non-Development Environment presentation

## Contact Information

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