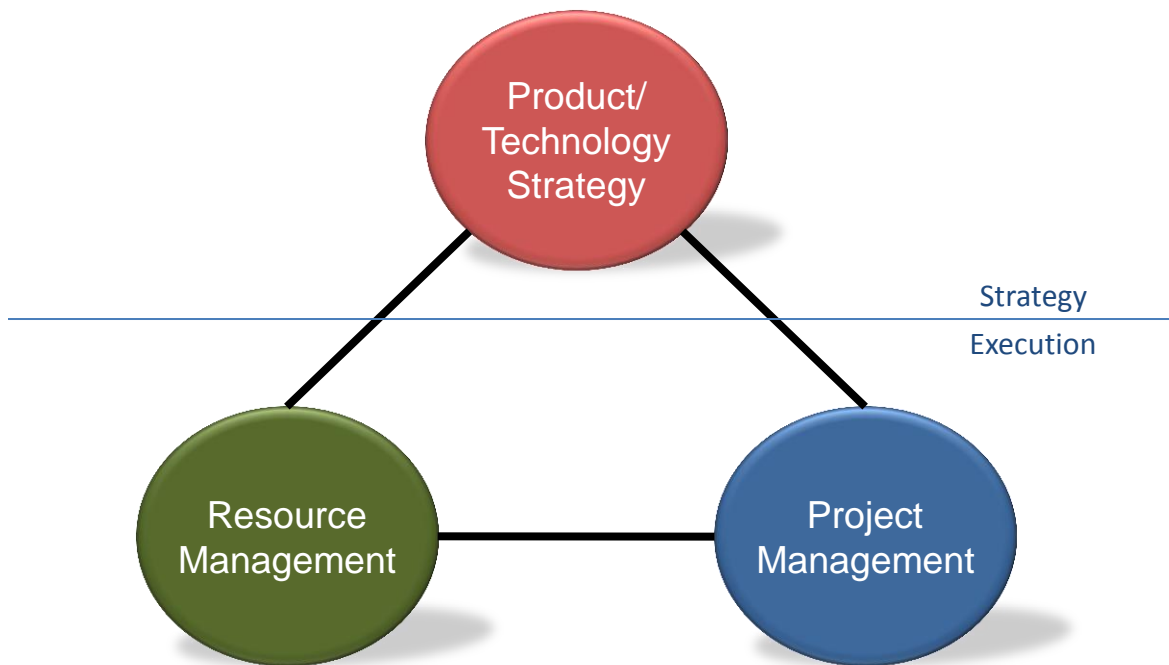


Three Dimensions of Product Development Today



More Companies are focusing on resource management to gain a major boost in productivity

- ✓ Increased emphasis on R&D resource utilization to improve productivity
- ✓ Formal measurement of resource productivity
- ✓ Introduction of resource requirements planning and management

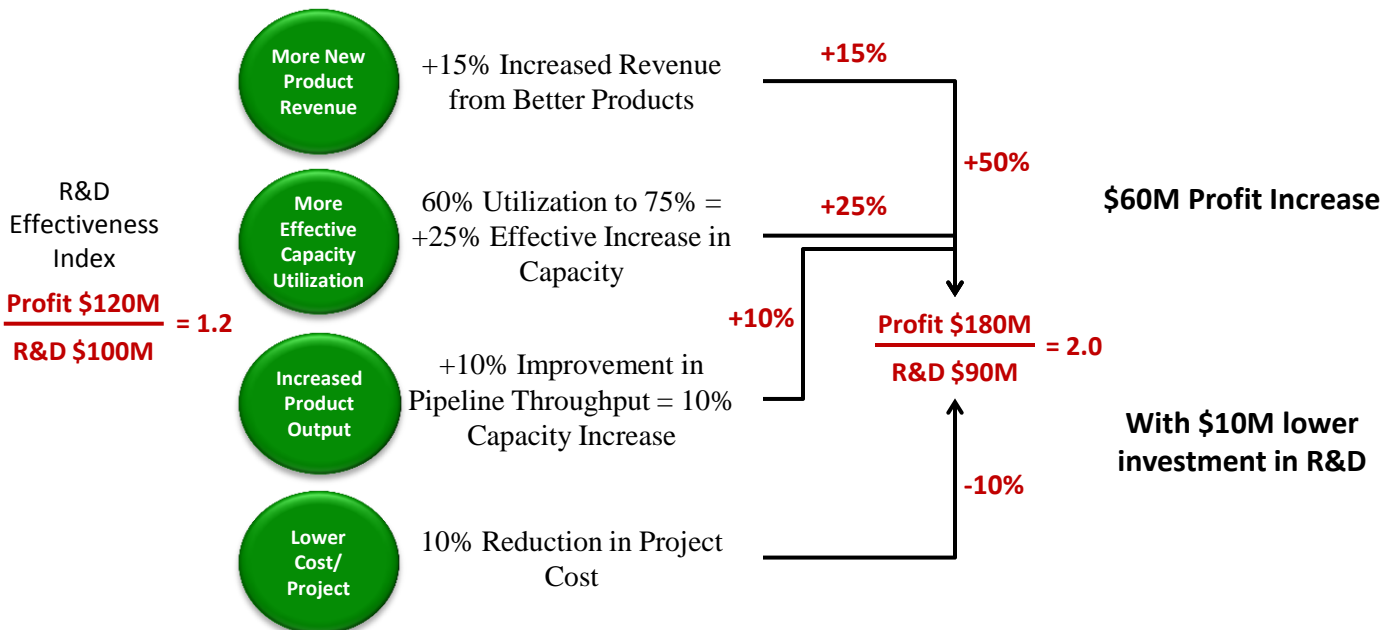
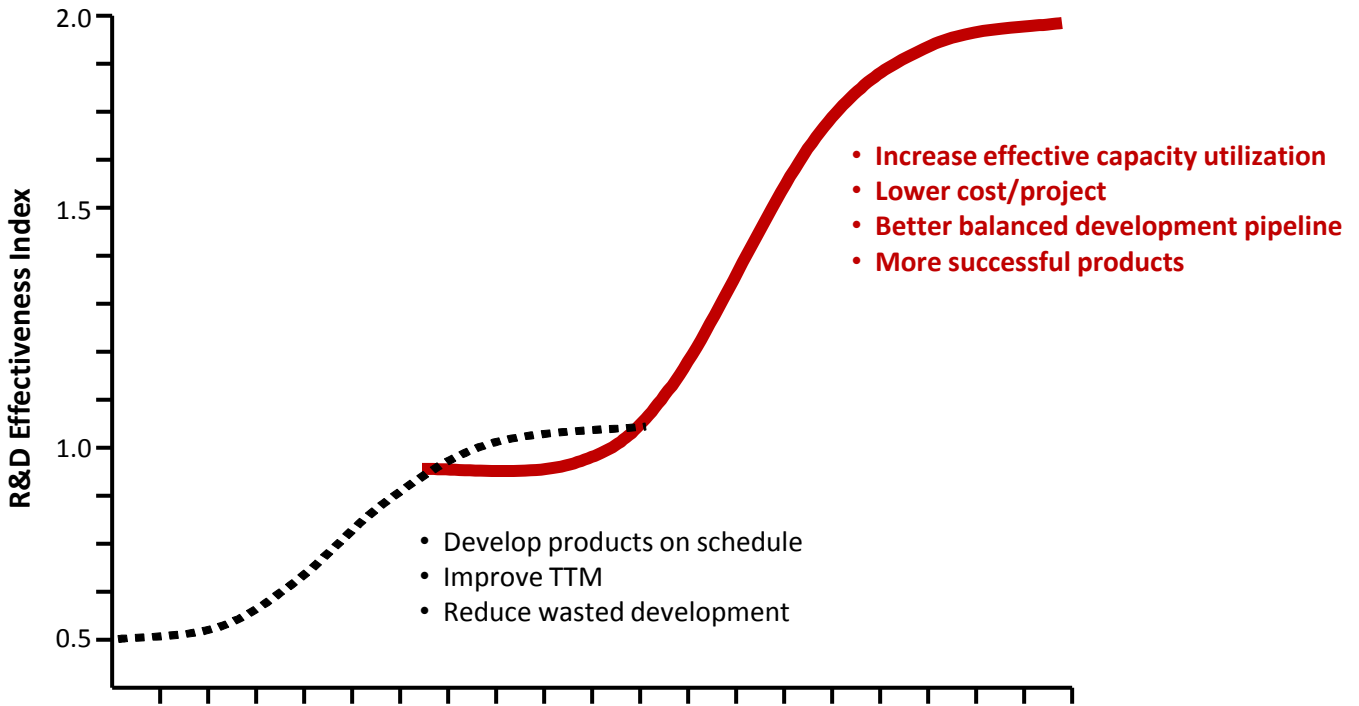
Best-Practices Companies are formalizing their front-end strategic processes

- ✓ More comprehensive product planning process beyond portfolio management
- ✓ Integrated technology roadmap
- ✓ More formal investment in breakthrough innovation efforts
- ✓ Integrated financial planning

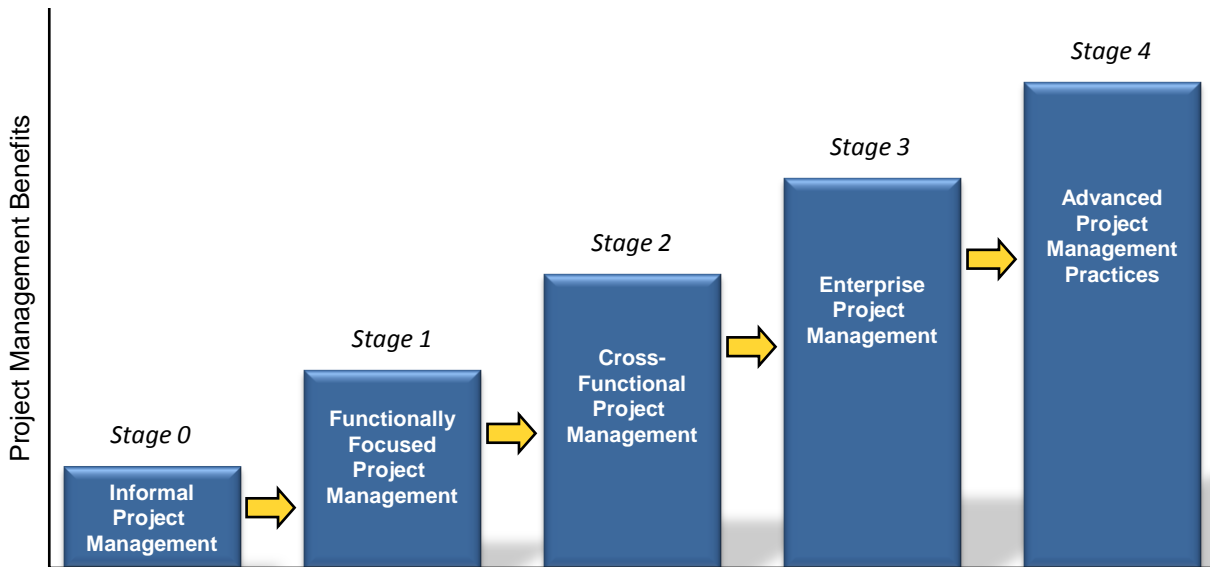
Experienced companies continuously improve project management

- ✓ Streamline the Phase Review Process
- ✓ Apply advanced project management techniques introduced
- ✓ Improve project team effectiveness
- ✓ Increase project resource efficiency

Successful companies continuously improve R&D effectiveness



Stages of Project Management



Stage 0 Informal

- Inconsistent project management practices
- No formal project management process or standards

Stage 1 Functionally Focused

- Basic project management disciplines by function
- Each functional area manages their aspects of project
- Inconsistencies and disagreements among functions are typical

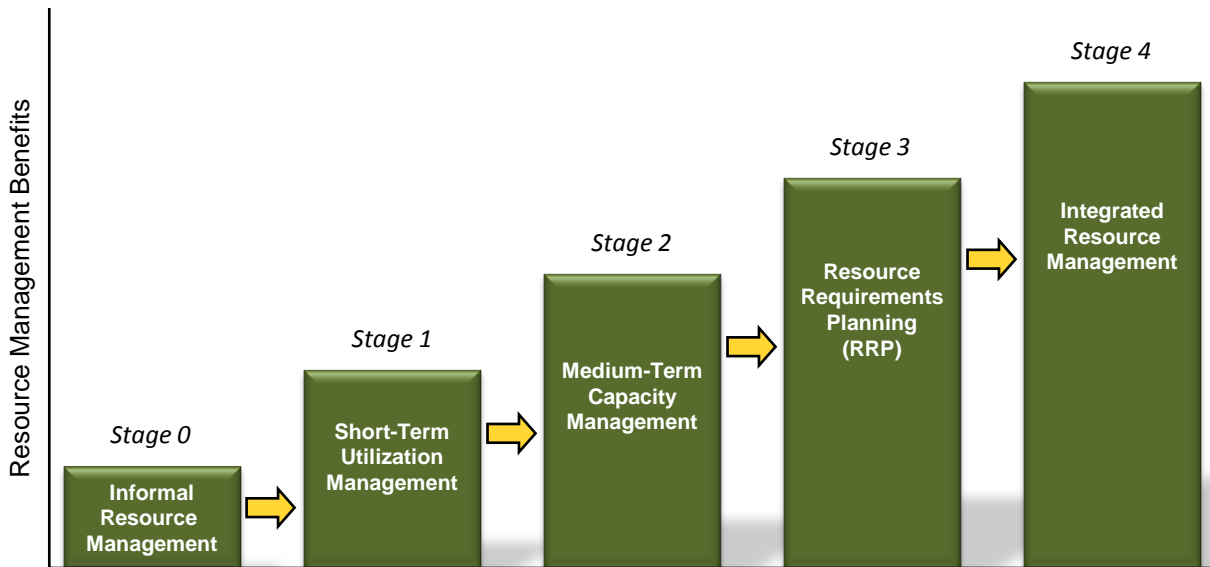
Stage 2 Cross Functional

- Cross-functional project teams are empowered to develop projects
- Phase-based project approval to empower teams
- Teams use structured development process
- All teams constantly trained in common team management

Stage 3 Enterprise Project Management

- Enterprise-wide project planning and management
- Advanced project management tools applied
- Phase review process simplified and enhanced
- More distributed program management and co-development

Stages of Resource Management



Stage 0 Informal

- Resource availability checked before phase approval
- Eliminates waste from starting too many projects

Stage 1 Utilization Management

- Resource assignments formally managed with a common system
- Resource managers responsible for resource utilization
- Enables significantly increased utilization of R&D resources

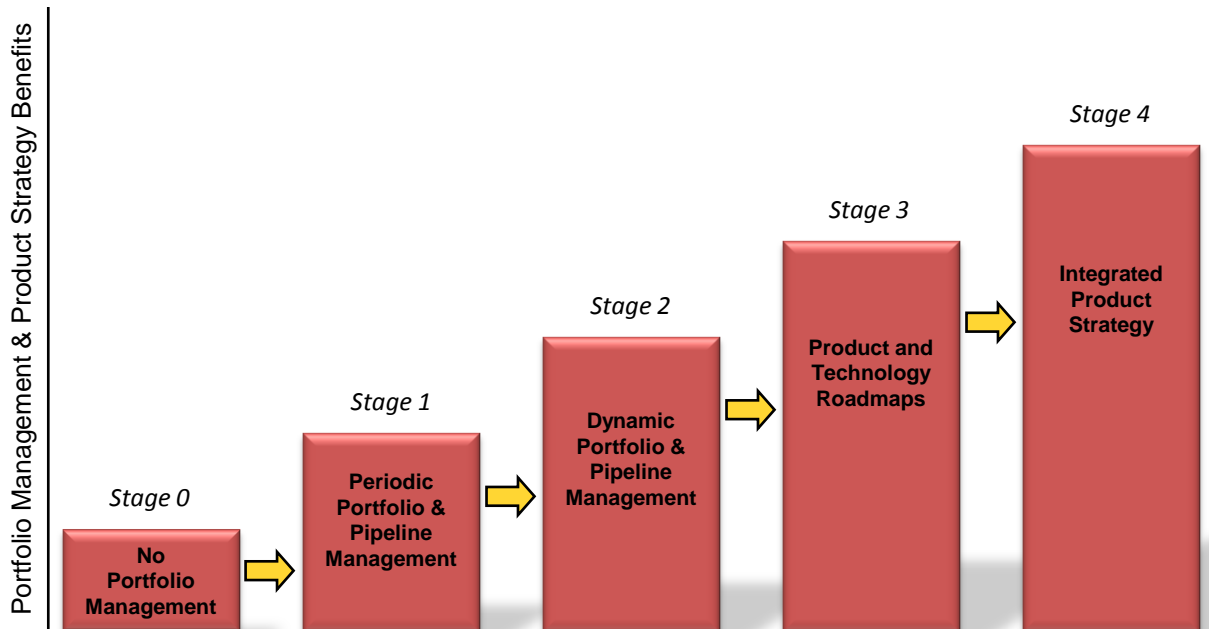
Stage 2 Medium-Term Capacity Mgmt.

- Resource management extended to resource needs
- Enables medium-term capacity planning
- Formal resource management transaction process
- Further increases R&D utilization

Stage 3 Resource Req. Planning

- RRP tools enable optimization of resources on individual projects
- Balances project resource needs with resource availability
- Reduces project costs and increases capacity

Stages of Product/Technology Strategy



Stage 0 No Portfolio Management

- Resource availability checked before phase approval
- Eliminates waste from starting too many projects

Stage 1 Utilization Management

- Resource assignments formally managed with a common system
- Resource managers responsible for resource utilization
- Enables significantly increased utilization of R&D resources

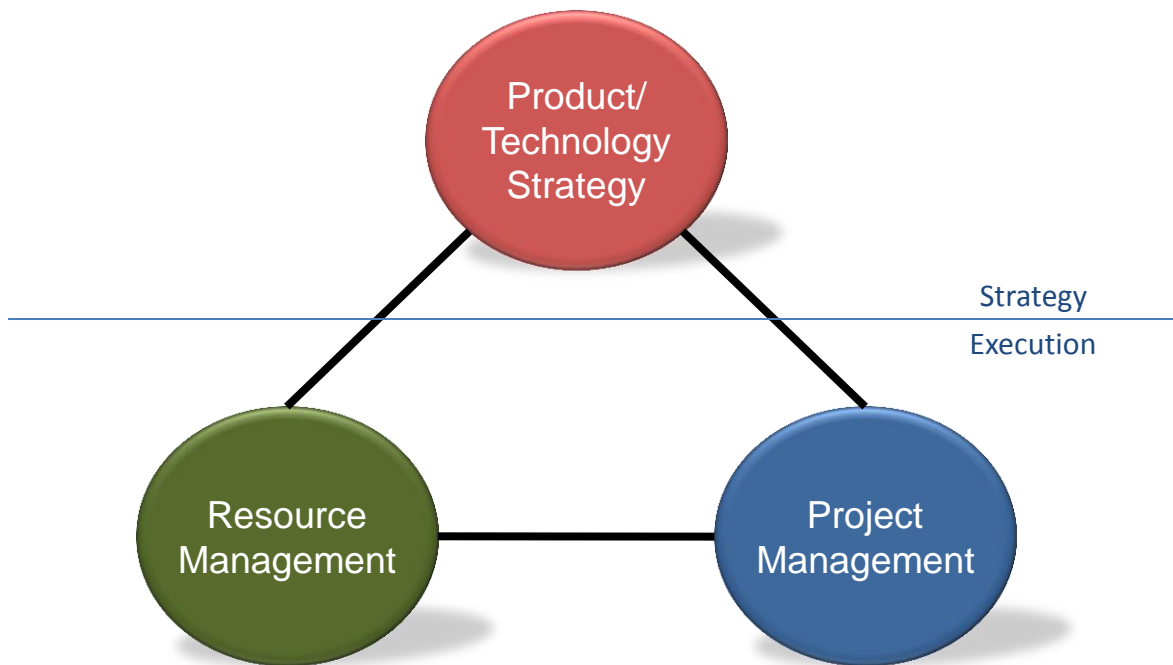
Stage 2 Dynamic Portfolio & Pipeline

- Resource management extended to resource needs
- Enables medium-term capacity planning
- Formal resource management transaction process
- Further increases R&D utilization

Stage 3 Product & Tech. Roadmaps

- RRP tools enable optimization of resources on individual projects
- Balances project resource needs with resource availability
- Reduces project costs and increases capacity

Thomas Group *Product Development Consulting Services*



Resource Management

- ✓ R&D utilization assessment
- ✓ Resource management stages-of-maturity assessment
- ✓ Utilization management process development and implementation
- ✓ Capacity planning process
- ✓ Resource requirements planning process

Product/Technology Strategy

- ✓ More comprehensive product planning process beyond portfolio management
- ✓ Integrated technology roadmap process
- ✓ Innovation process
- ✓ Integrated financial planning process

Project Management

- ✓ Streamlining the Phase Review Process
- ✓ Implementation of advanced project management techniques
- ✓ Project team effectiveness training
- ✓ More efficient project resource planning