Agile Project Management
Introduction to Application Life Cycle Management

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***Note**: Class notes/presentation prepared with due credit to all the references.*

What are we going to discuss?

- Educator background
- Session Plan
- Application Life-cycle Management (ALM) process
  - Unified view of the ALM
  - Pillars of the ALM
- Overview of the CMM (software CMM)
  - Operating Models Perspective – CMM vs Agile
- Projects vs Programs
  - Similarities, Differences, Determination, Dimensions, Portfolio view, Management Approach
- Leadership Ladder
- Questions & Answers

Educator Background …Prof. Prakash Attili

Global IT Delivery (USA for 6 years) (11 years)

- ✓ Developer, Technology Lead, Manager, Senior Manager

Leadership Roles (5 years)

- ✓ Agile Coach and Strategist
- ✓ Head, Learning Partner for Cyber Security practice @Infosys
- ✓ Head, Learning Partner for Chennai Development Center @Infosys

Industry-Academic

- ✓ Researcher & Adjunct Faculty, DoMS, IIT Madras
- ✓ Board of Studies - VIT, SRM etc.,
- ✓ Key note talks - CII, ISACA, DSCI, EFY, and SPIN

Global Consulting (2 years)

- ✓ Principal Consultant - Large Strategic Deal

Academic-Industry *(2 years)*

- ✓ Full time Faculty, IIM Lucknow

Education Background

- ✓ Bachelor from Andhra University (Mechanical Engineering – Gold Medalist, 1996-2000)
- ✓ Masters from IIT Bombay (Industrial Engineering & Operations Research, 2000-2002)
- ✓ Ph.D. from IIT Madras (Information Systems – Best Doctoral Student Award from AIS, USA, 2012-2017)

Course Overview (15+ 15 hours)

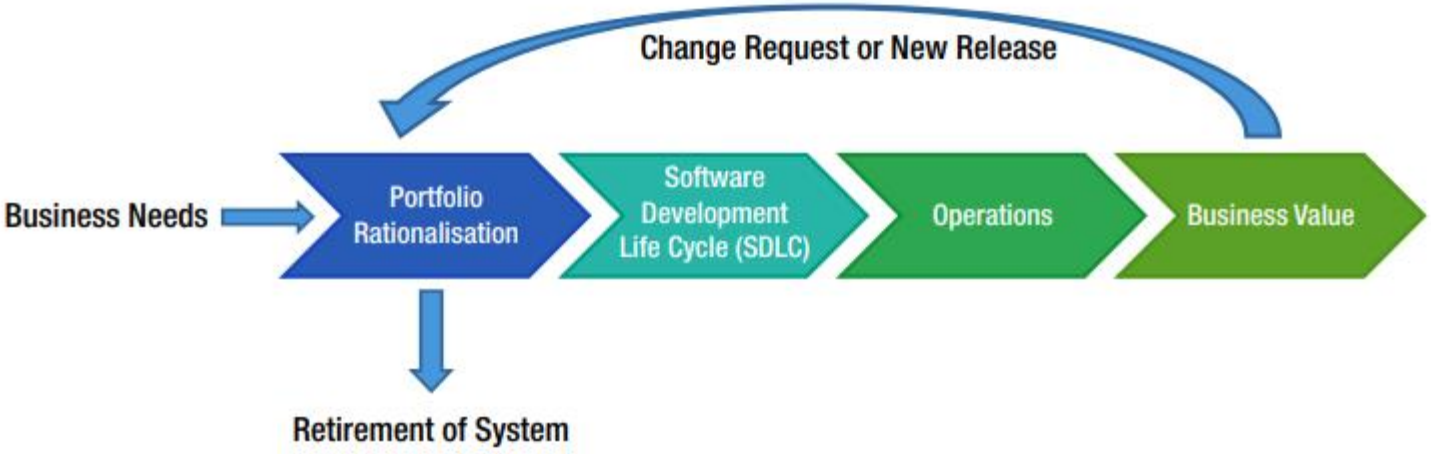
➢ Overview – Importance

The course is based on the premise that effective project, program and product management is essential for the digital transformation of a firm. In a global corporation, successful IT managers need to select appropriate project management methodologies with an understanding of the various aspects like – estimating, planning, scheduling, monitoring and control, and closure of the IT projects and programs.

➢ Objectives

- ✓ To provide an understanding of the Information Technology (IT) project management, program management and product management.
- ✓ To provide a comprehensive understanding of the important project management methodologies – waterfall, agile, and hybrid project management in detail.
- ✓ To provide an understanding of the estimating, planning, scheduling, monitoring and control, and closure of the IT projects and programs.

Application Life Cycle Management (ALM) Process

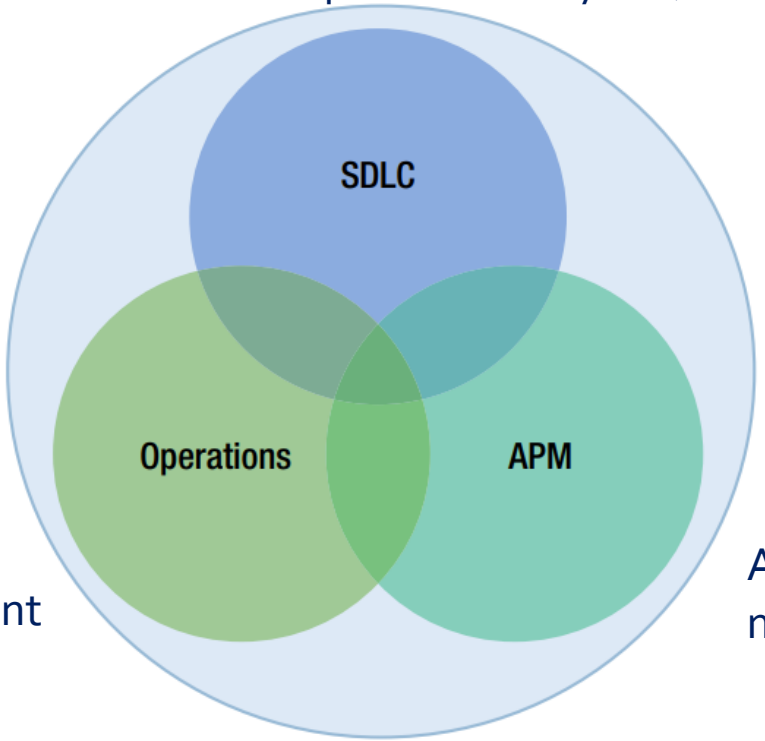


ALM Roles

✓ Stakeholders	: Pay for project with decision rights
✓ Business manager	: Responsible for business value, who initiates the process
✓ Project manager	: New age role - Certified Scrum Master (CSM)
✓ Product owner	: New age role - Certified Scrum Product Owner (CSPO)
✓ Program manager	: New age role - Agile Coach / Certified SAFe® Agilist
✓ PMO	: Project / Program Management Office
✓ Developers	: Certified Scrum Developer (CSD)
✓ Business Analyst	: Focus on business models, business processes
✓ Architects	: Brings Enterprise Architecture views
✓ User experience designers	: Experience of users
✓ Database administrators	: Effective data management, focus on data architecture
✓ Testers	: Focus on Test Driven Development
✓ Operations and maintenance	: Basics of the DevOps

Big Picture of ALM

Software Development Life Cycle (SDLC)

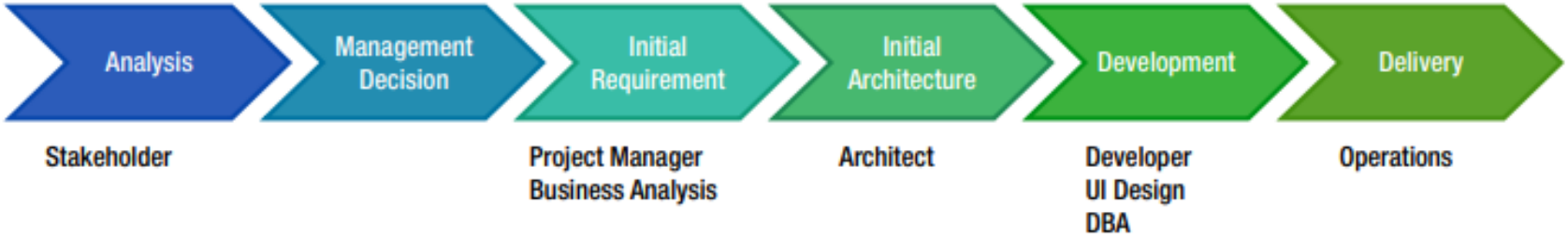


The Unified View

The Service Management or Operations View

Application portfolio management (APM)

SDLC View



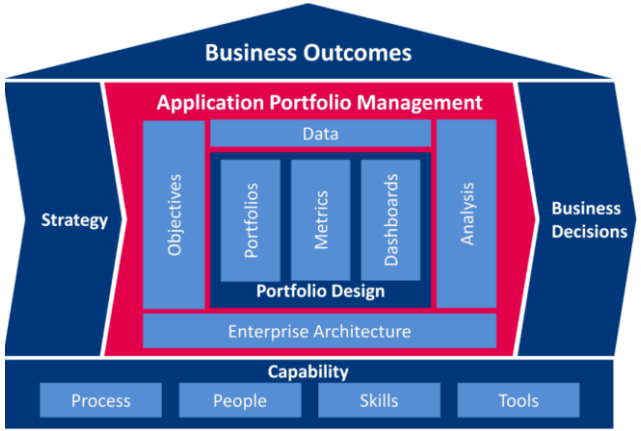
- ✓Processes that span these activities - Manages the relationships between development Project artifacts used or produced by these activities (in other words, provides traceability.
- ✓These artifacts include UI mockups done during requirements gathering, source code, executable code, build scripts, test plans, and so on.
- ✓Reports on progress of the development effort as whole so you have transparency for everyone regarding project advancement.

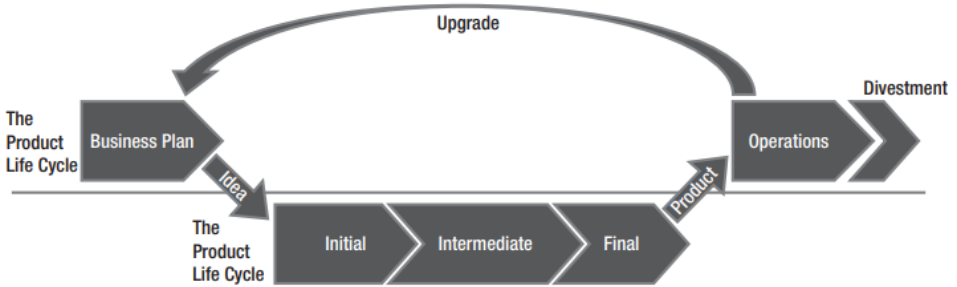
The Service Management or Operations View

- ✓ ALM as a process that focuses on the activities that are involved with the development, **operation, support, and optimization** of an application so that it meets the **service level that has been defined**
- ✓ Start of this phase "Deployment into Production"
  - In SDLC view, it starts from decision to start with a project
- ✓ Separate Vertical with defined goals
  - Focus on the task as shown in diagram

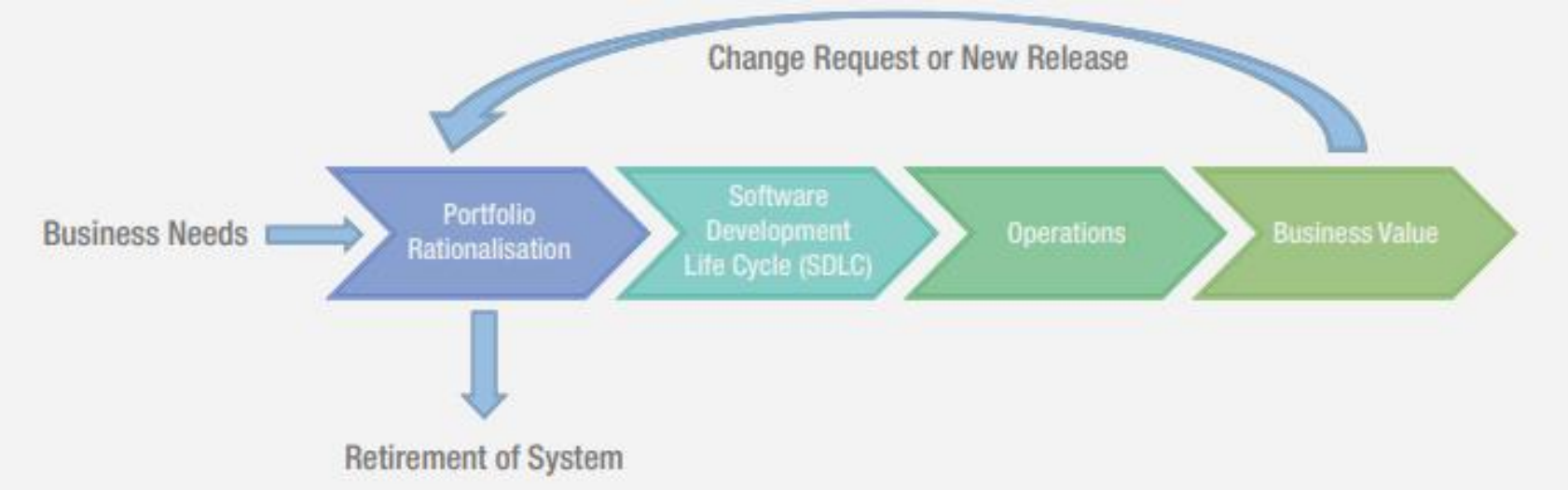
Application portfolio management (APM) view

- ✓Application as a product managed as part of a portfolio of products. APM is a subset of project portfolio management (PPM)
- ✓Product life cycle starts with a business plan—the product is an application or system that is one part of the business plan.

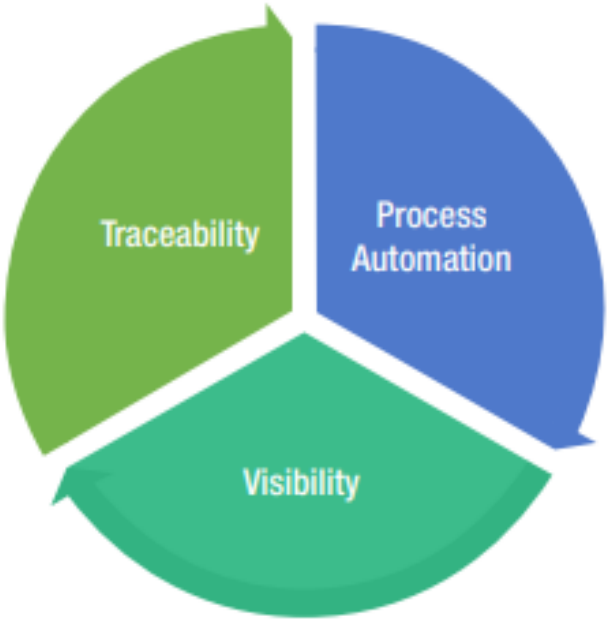




Unified View of ALM (Relook)



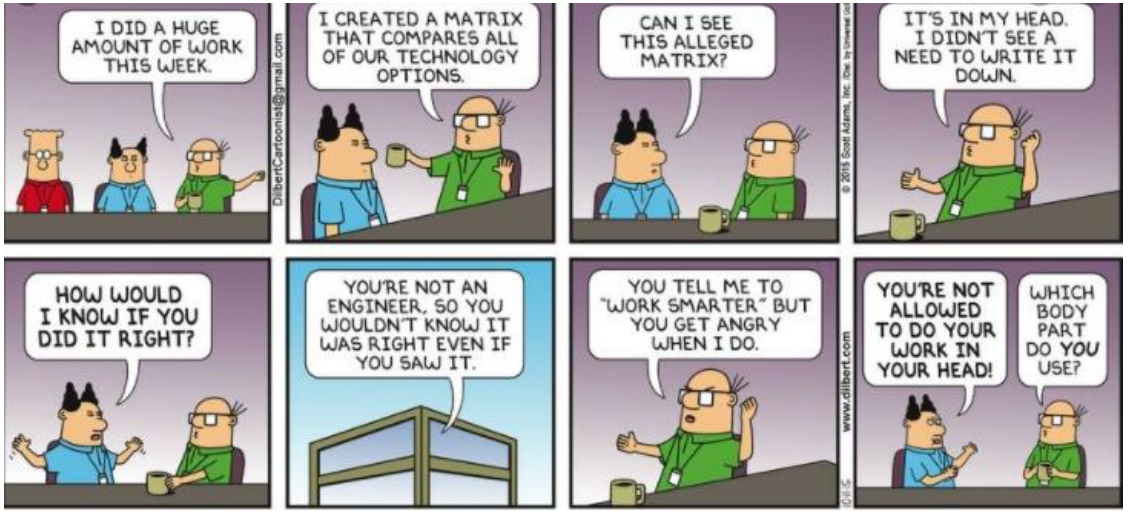
Pillars of the ALM



Reference: Dave West, "The Time Is Right For ALM 2.0+," Forrester Research

Lack of Traceability

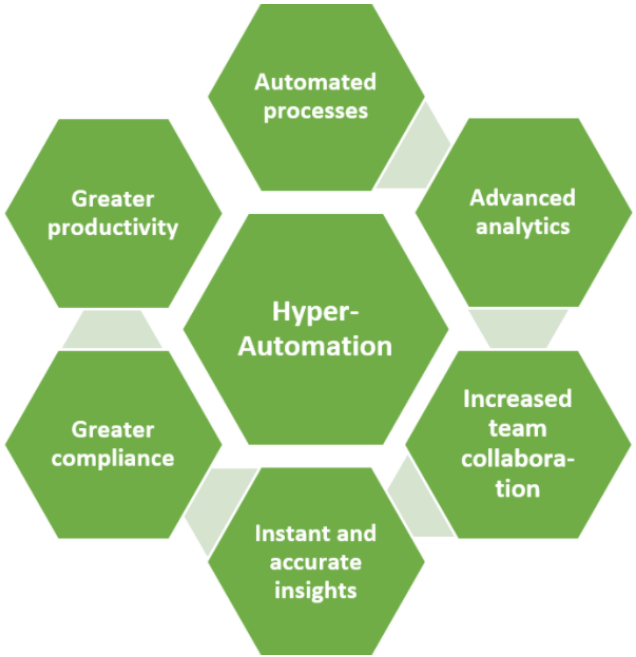
- ✓Fear of failure
- ✓Cyber threats
- ✓Dependency on the resources
- ✓Lost requirements
- ✓Late Response to regulations
  - BASEL, GDPR, FDA for example
- ✓**High cost (Cost Driver)**



Traceability through - Architect models, design models, build scripts, unit tests, test cases, and so on

Automation of High-Level Process

- ✓ Approval processes control handoffs between the analysis and design or build steps, or between deployment and testing. Much of this is done manually in many projects
- ✓ ALM stresses the importance of automating these tasks for a more effective and less time-consuming process
- ✓ Having an automated process also decreases the error rate compared to handling the process manually



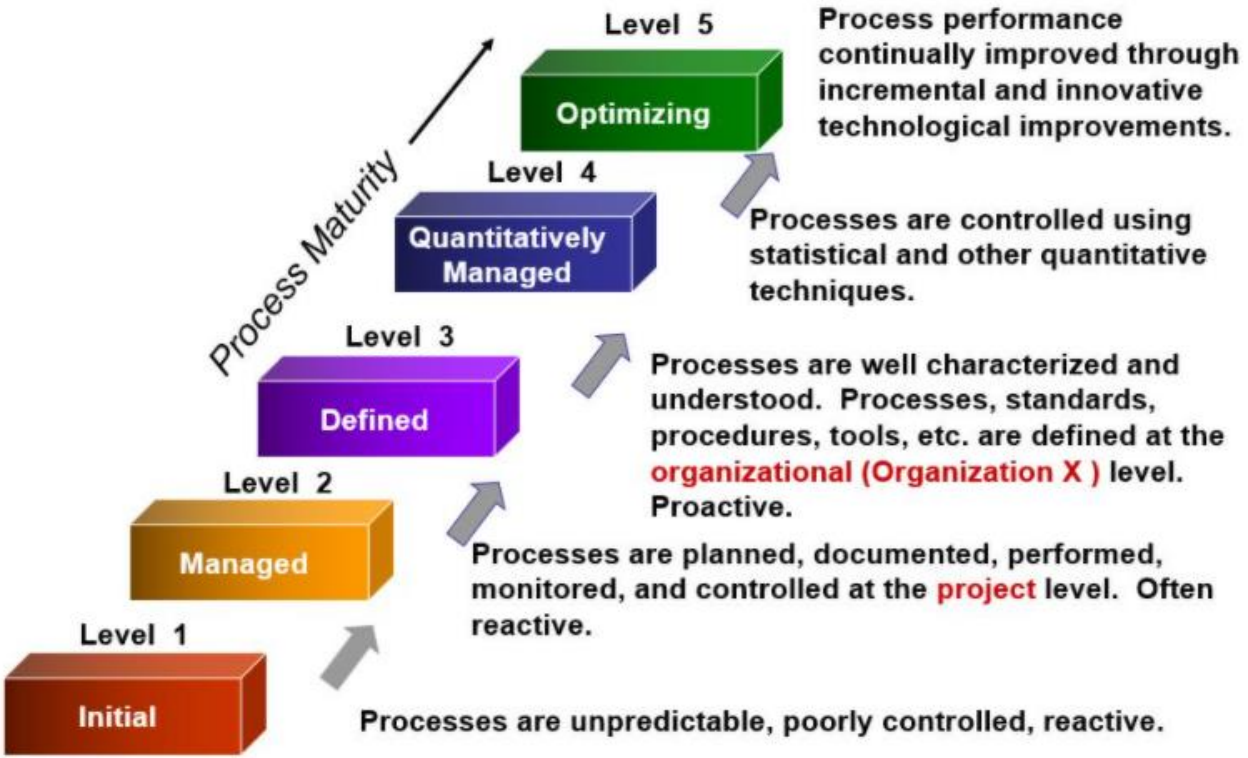
Hyper Automation is the Industry Term

Visibility into Progress

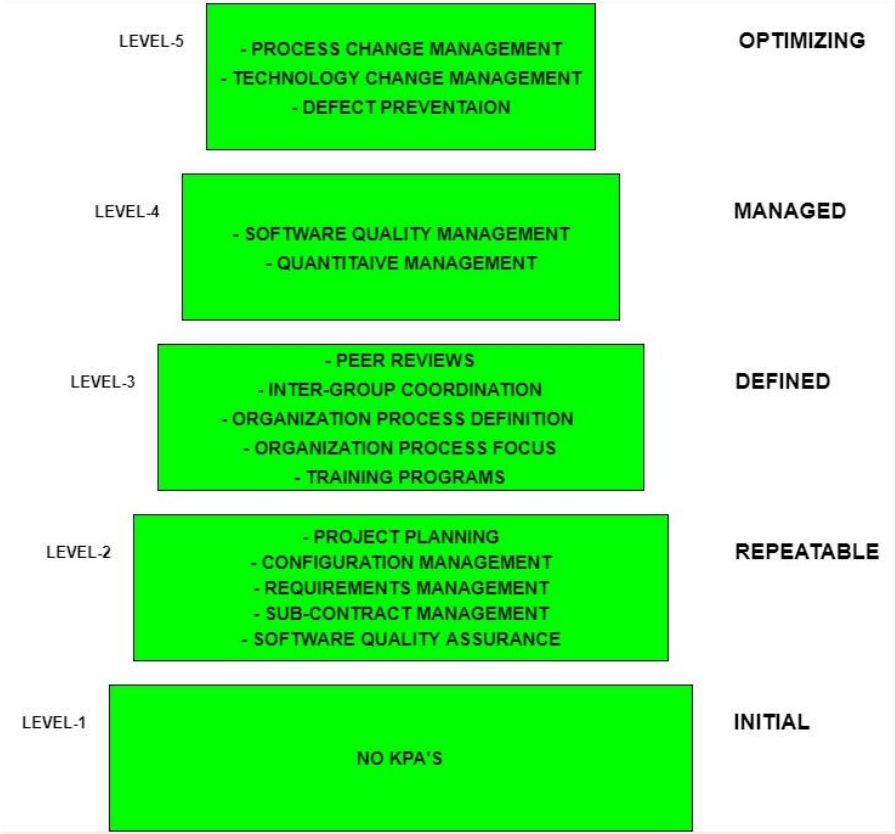
- ✓Importance of
  - Transparency
  - Working Demo
  - Review meetings

https://www.youtube.com/watch?v=Fvbt4i4HHIA

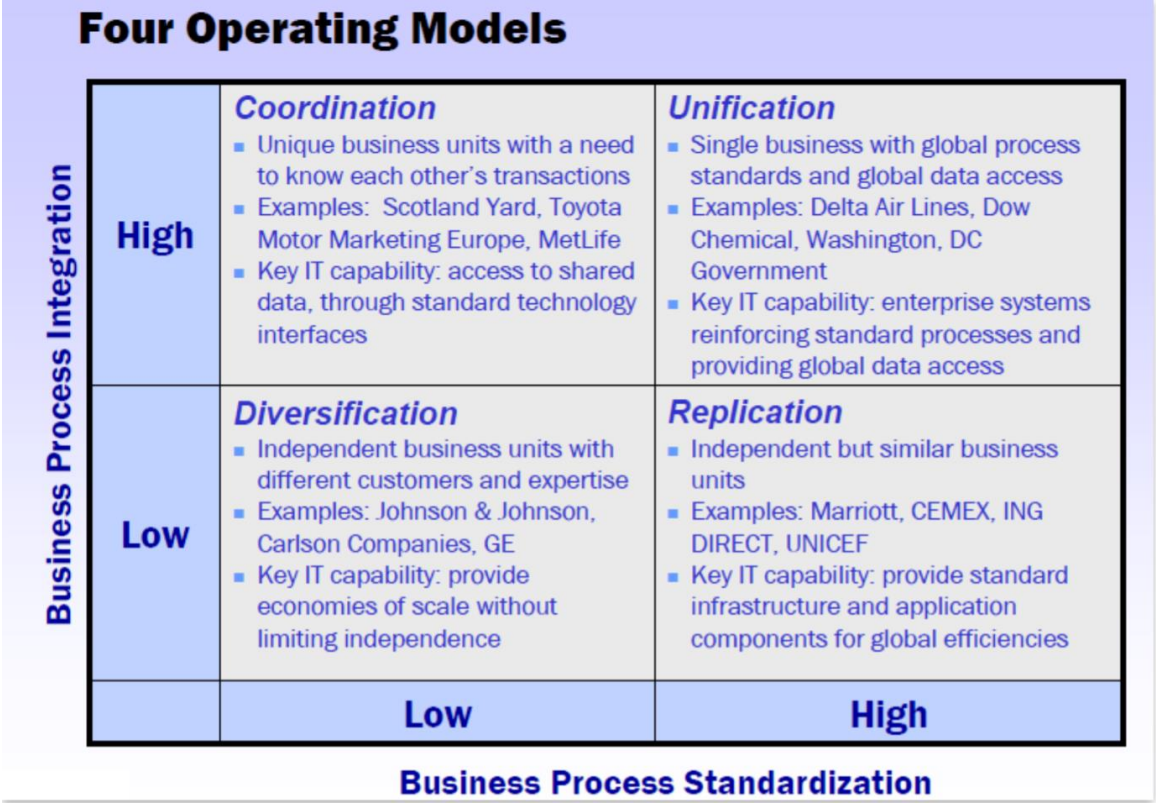
CMM – Capability Maturity Model



Software CMM



Operating Models Perspective (CMM – Agile)



Source: Enterprise Architecture as Strategy: Creating a Foundation for Business Execution. J. Ross et al (2006) HBS Press

Project vs Program (from PMI Standards)

- Project
  - A project is created to deliver a specific output as efficiently as possible
  - A temporary endeavour, closes on completion of work characterized to deliver

- Program
  - Program focuses on co-ordination of number of related projects and other activities, over time, to deliver outcome that benefits organization
  - Contains elements outside the scope of discrete projects in the program

- Can projects / programs be managed similarly ?
  - Change Management
  - Risk
  - Communication

Contract a project to third party vs integral role of program manager being part of organization strategic business management team

Project vs Program

- Project
  - Efficient creation of a defined deliverable (Certainty)
  - *Focused on efficient creation output*

- Program
  - Maximizing the benefits realized with a constrained resources in a changing environment (Un-certainty)
  - *Focused on delivering outcomes*
  - Could be Multi-project, Strategic (learning-organization) or Operational

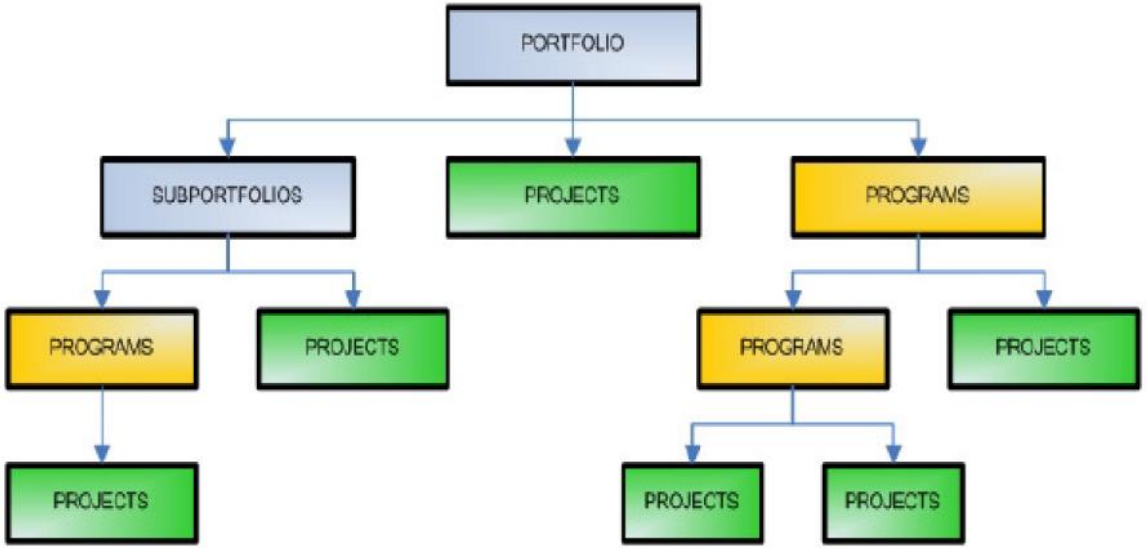
- Example
  - Re-build a school, building export oil refinery - Project
  - Disaster Relief efforts, Olympics logistics - Program

If organization can't tell the project manager what they want, the project won't succeed. Just calling it as 'program' doesn't help.

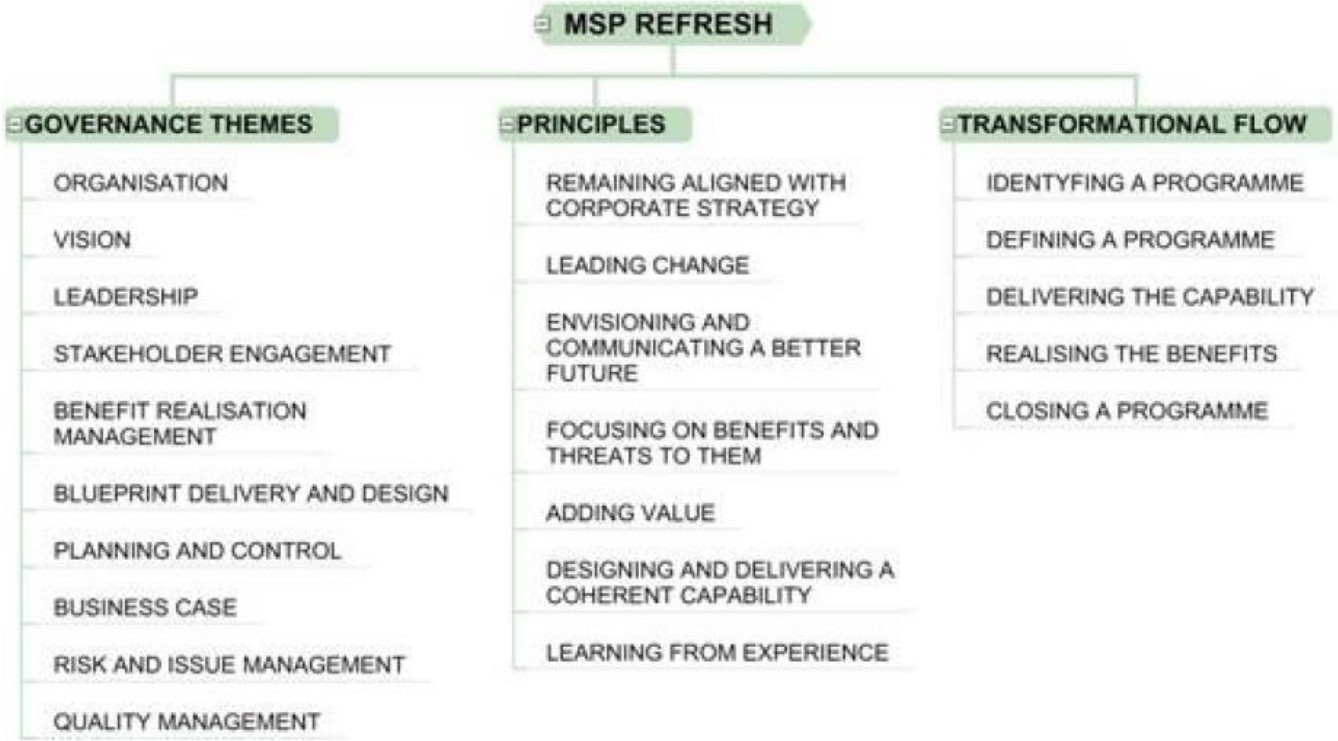
More importantly complex projects are not programs.

Portfolio View

- Focuses on selecting an optimum mix of project and programs
  - Based on availability of funding and resources



MSP (Managing Successful Programs) - PRINCE2 (PRojects In Controlled Environments)

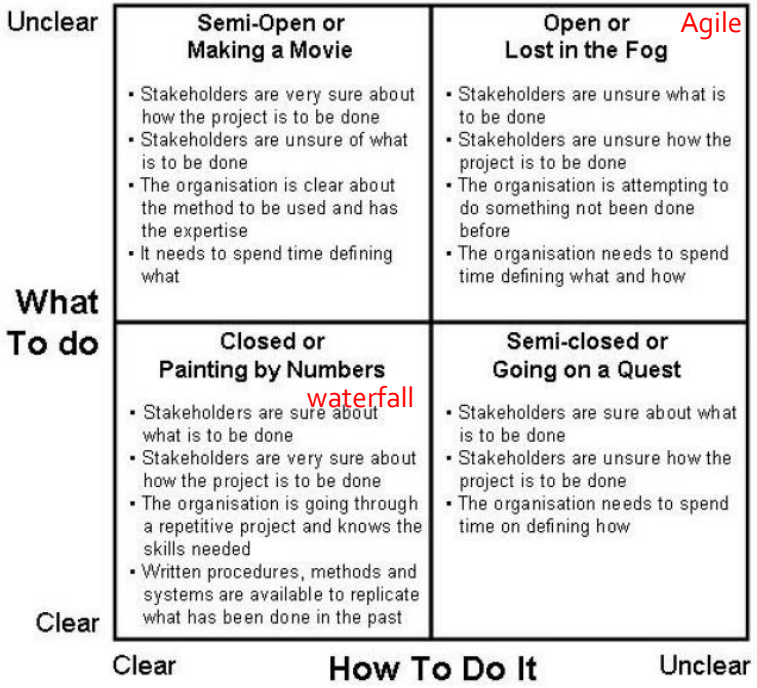


Dimensions of Project Or Program (Commonalities)

- ✓ Size measured in terms of value
- ✓ Degree of Technical difficulty in creating the output (knowledge – cutting edge tech)
- ✓ Complexity of relationships with stakeholders
- ✓ Degree of uncertainty involved in the work

- ✓ ***Note***

  Mega projects may not be called as projects. However, 3 to 4 peoples can resolve conflicts by themselves – may not be case with 300 to 400 that requires formal process, leadership and motivation



Determine Programs vs Projects

- Determines the management approach, Key questions to ask
  - ✓ **Is associate change wide-ranging, and designed to achieve a strategic business objective?**
  - ✓ **Are multiple deliverable staggered over a period of time?**
  - ✓ Is the timescale loose and flexible focused towards achievement of benefits, rather than meeting strict deadlines alone?
  - ✓ Is scope is fluid and are dynamic changes expected?
  - ✓ Is there lot of ambiguity and uncertainty?
  - ✓ Is it at a departmental or high level?
  - ✓ Are benefits expected to be delivered incrementally during the lifespan of initiative?

The problems caused by managing a major project as program are far fewer than the problem caused by manging a program as project.

From Weaver, P. at PMI® Global Congress 2010

Difference – Projects vs Programs

On time, on budget	vs	Value
Optimum deliverable	vs	Integration of deliverables to Operations
Controlled framework	vs	Complex stakeholder management
Defined risk management	vs	Open ended, externally influenced risk
Focus on Details	vs	Focus on vision, high level architecture
Tactical leadership	vs	Strategic leadership
Focus on tech objectives	vs	Business objectives

From Weaver, P. at PMI® Global Congress 2010

Management Approach – Projects vs Programs

	Project	Program
Manage Uncertainty	Seek certainty before commencing execution	Plan with an acceptance that world change and impact organizations
Manage Change	Minimize change in scope as it impacts time, cost, risk and quality	Embrace change, maximize value
Manage Risk	Low risk - Mitigate threats, minimize undefined risk by locking	High risk – plan contingencies, Risk vs Return approach
Manage Stakeholder Communication	Align stakeholders with project objectives	Engage stakeholders, map to future responsibilities – Maximize long-term value
Manage Schedules	Target 100% work within schedules	Interdependencies is key – a minor deliverable miss in one project might cause major consequences to other / overall

From Weaver, P. at PMI® Global Congress 2010

Leadership Ladder

From Weaver, P. at PMI® Global Congress 2010

References

- ✓Agile Project Management with Azure DevOps - Concepts, Templates, and Metrics by Joachim Rossberg, Apress Publishing.
- ✓Agile Product Management with Scrum - Creating Products that customers love by Roman Pichler, Pearson Publishing.
- ✓"Understanding programs and projects - oh, there's a difference!", Paper presented by Weaver, P. at PMI® Global Congress 2010

THANK YOU