25th anniversary
annual INCOSE
international symposium
Seattle, WA
July 13 - 16, 2015

A Systemic Framework to facilitate large and complex IT transformational Programs

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Session Chair Terje Fossnes

Title

A Systemic Framework to facilitate large and complex IT transformational Programs

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Day

Wednesday, 15 July 2015

Session

7.3 - Government, defense, Information and communication

Schedule Time

10:45.

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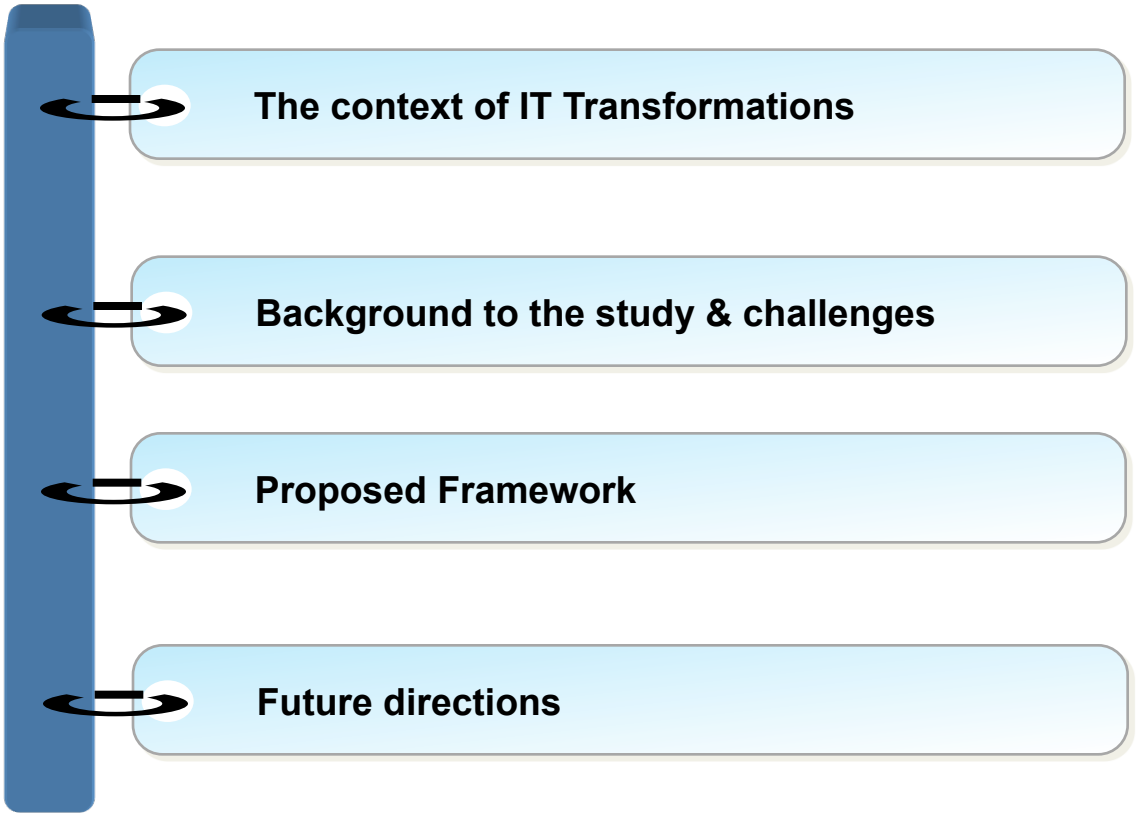
Flow


The context of IT Transformations
Background to the study & challenges
Proposed Framework
Future directions

Abstract

This paper ***presents a systemic framework*** for addressing the distinct challenges of ***Program management in the Information Technology (IT) services*** Industry environment. It was an outcome of the work carried out internally in the organization The study involved identifying the challenges and defining the framework using a multi modeling approach. It was ***found Programs were looked through the same lens as projects***, thereby missing the big picture and the benefits synthesized in a Program. Programs are a collection of projects, they differ in terms of scope, size, scale & complexity with respect to people involved, requirements, interfaces, time required etc. ***while programs are large and deliver benefits, projects deliver outputs***. The study also reviewed the existing program management frameworks and models for addressing these challenges and found they were ***domain agnostic and some areas specific to IT domain were not addressed.*** The nature of every IT programs is distinct because it belongs to different client domains, technology changes are rapid, and requirements keep changing as a result of changes in the environmental. The study identified several ***challenges which were then organized under five dimensions,*** each having similar concerns. Solutions were defined under each of these dimensions, they included new systemic frameworks and

IT programs vs Non IT programs

IT Services	Construction Industry
Different business domains	Different locations in terms of geography, regulations
Different transformation levers	Similar transformation levers
Technology by itself a transformation lever Technology changes accelerated	Technology variations minimal Vision led transformation
Outcomes less tangible	Outcomes more tangible
Benefits over a time period.	Benefits realization early

What is Program Management?

Program management is the coordinated organization, direction and implementation of portfolio of projects and activities that together achieve outcomes and realize benefits that are of a strategic importance

- Office of Government Commerce, UK

A program is a group of related projects managed in a coordinated way to obtain benefits and control not available from managing them individually.

- Project Management Institute, 2004, A Guide to the Project Management Body of Knowledge third Edition (PMBOK ® Guide)

Projects versus Programs

(courtesy: PMI)

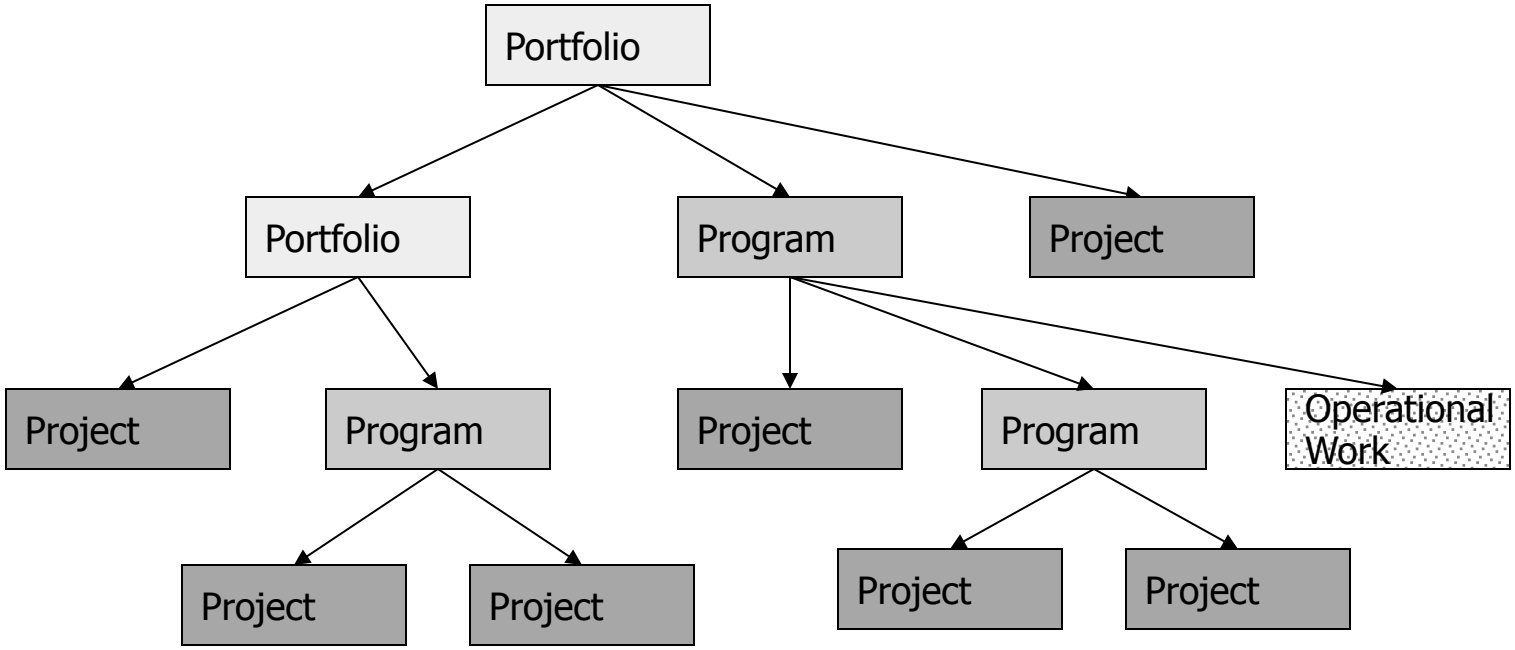
PROJECTS	PROGRAMS
Projects have a narrow scope with specific deliverables	Programs have a wide scope that may have to change to meet the benefit expectations of the organization
The project manager tries to keep change to a minimum	Program Managers have to expect and even embrace change
Success is measured by budget, on time and products delivered to specifications	Success is measured in terms of Return on Investment (ROI), new capabilities, benefit delivery
Leadership style focuses on task delivery and directive in order to meet the success criteria	Leadership style focuses on managing relationships and conflict resolution. Program managers need to facilitate and manage the political aspects of stakeholder relationships.
Project managers manage technicians, specialists etc.	Program Managers manage project managers.
Project managers are team players motivating by knowledge and skills	Program Managers are leaders providing vision and leadership
Project managers conduct detailed planning to manage the delivery of the products of the project	Program managers create high-level plans providing guidance to projects where detailed plans are created.
Project managers monitor and control tasks and the work of producing the project's products	Program Managers monitor projects and ongoing work through governance structures

Managing Project Vs Managing Program

Managing Project	Managing Program
▪ Intense and focused, concerned with delivering predetermined outputs	▪ Broad activity delivering business change and achieving outcomes, a wider set of benefits than individual projects could realize in isolation
▪ Best suited to closely bounded and scoped deliverables that can be relatively well defined	▪ Is suited to complex and changing inter relationships in a wider, more dynamic and uncertain environment
▪ Realizes benefits following the end of the project, after implementation of the projects outputs	▪ Is suited to managing benefits realization and ensuring a smooth and risk-reduced transition into a new business operations ▪ Usually continues until the organization has achieved the required outcomes ▪ Is able to maintain business as usual in areas affected by the change whilst managing the transition to new operations

Nested Structure of Portfolios and Programs

- At an Enterprise level, Strategic Portfolios include Programs.
- Programs can de-compose into a set of Projects or other Programs.



Program Management – A View

Portfolio

Program

Project

Some Examples

Transitioning an Outsourcing Engagement
- Application Outsourcing,
- Infrastructure Outsourcing
- BPO

Enterprise Solution Implementation
- ERP
- CRM
- SCM

Enterprise Infrastructure Deployment
- EMP

Enterprise Transformation
- Process Transformation,
- Structural Transformation
- Architecture Transformation
- Six-Sigma deployment
- Business Excellence Program

Business Strategy Implementation
- Expansion of Business Scope
- Mergers and Acquisitions
- New Product Development

Large-scale Infrastructure or High-visibility Programs
- Golden Quadrilateral
- ObamaCare, Delhi Metro
- Commonwealth Games
- Olympics Games

Public Application Deployment
- MCA-21

Drivers Of Program Complexity

- Different Domains to deal with
- Size of the programs
- Technology change a constant
- Constitutes IT and non IT components
- Vendor or client led
- Whole program not transparent to vendor
- Qualitative benefits
- Larger time frames for realization
- Requirement challenges (change and articulation)

Terminology Used

Outcome

The resulting effects of change, normally affecting real world behavior and/or circumstances

End-goal

The ultimate objective of a program

Capability

A service, function or operation that enables the organization to exploit opportunities

Benefit

A measurable improvement resulting from an outcome

Program

A portfolio of projects and activities that are coordinated and managed as a unit such that they achieve outcomes and realize benefits

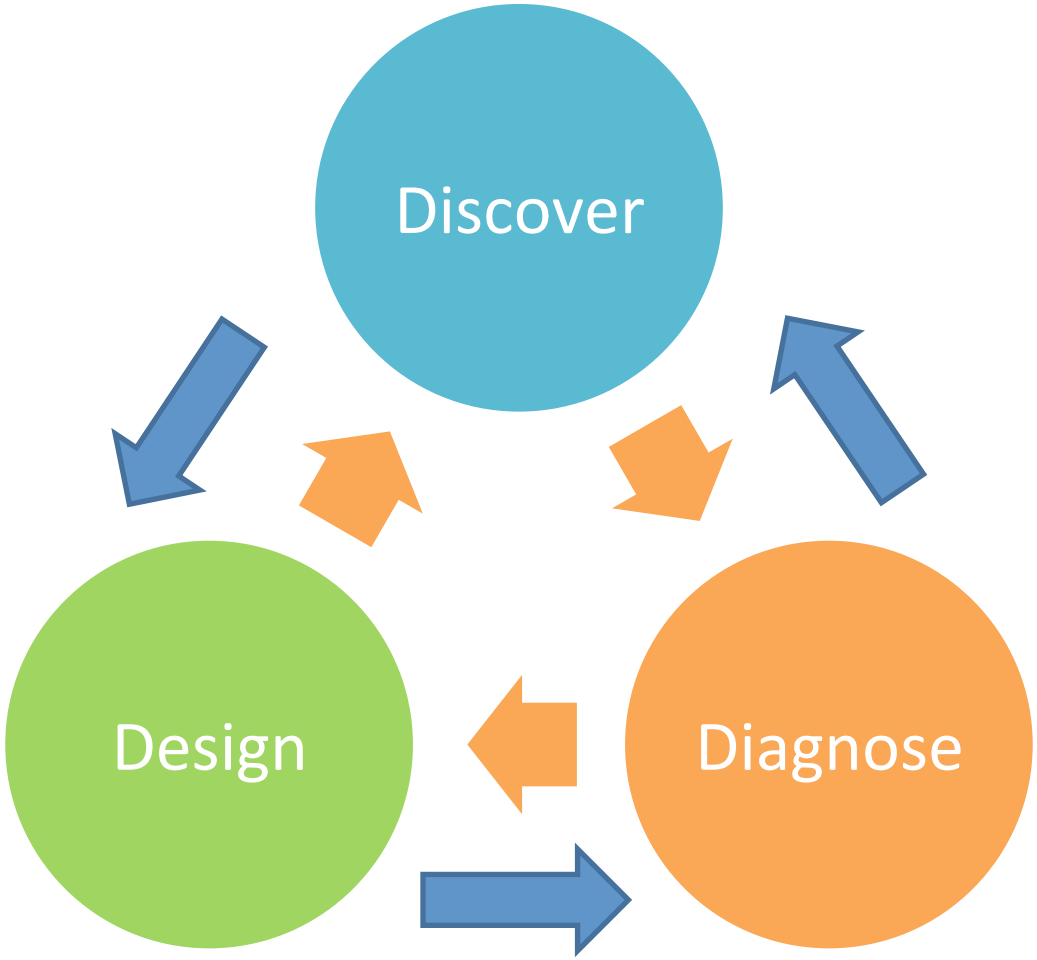
Project

Particular way of managing activities to deliver specific outputs over a specified period and within cost, quality and resource constraints

Objectives of the Study

- To capture the challenges of Program management across a cross section of IT services Programs.
- To understand the specific program needs from a systemic perspective
- To define the elements of IT specificity in the framework.
- To address to a large extent not only the “What” but also the “How” aspects of addressing the challenges in certain key areas of program management for IT Programs.
- To identify or define models from relevant streams like Business Management, Systems Engineering, Program Management and Software Engineering to address the needs.
- To define a unified systemic framework which will help the program managers to develop their capability to overcome the challenges while implementing the program objectives.

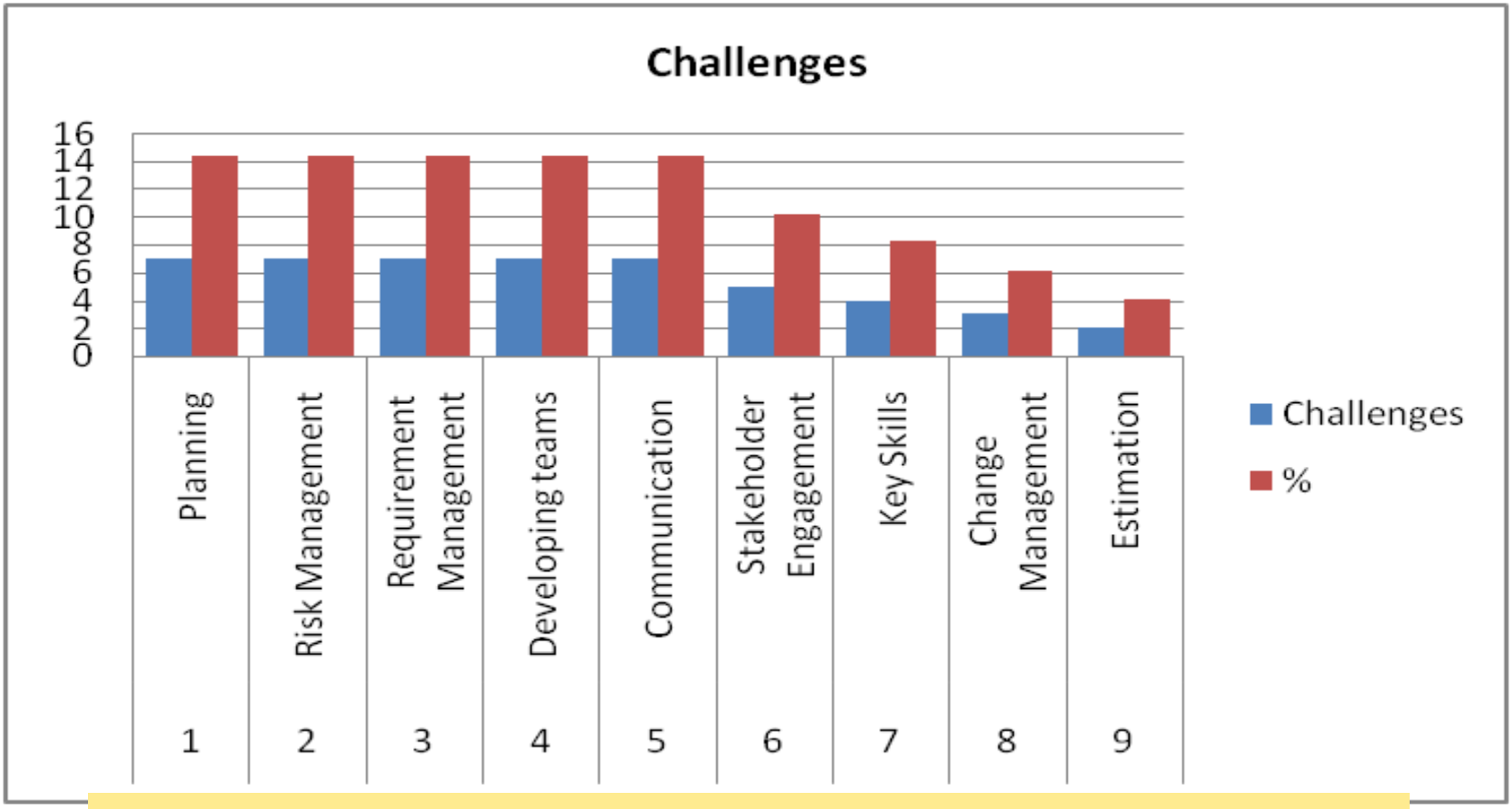
Approach used: Multi-Modelling



Discover Stage

- Data was collected across various organizational programs in the Insurance domain (Surveys conducted across 7 accounts, each account having several IT programs under its umbrella.)
- Direct interviews and discussions were conducted with 35 associates, in the capacity of Program managers, Project managers, Delivery Managers, Account Managers and Portfolio Managers
- Studied the Program Management (PgM) Body of knowledge (BoK) from PMI's PgMP and Cabinet Office's MSP® (Managing Successful Program) and other Material from various sources were explored.
- Internal organization process & training documents on Program management.
- Discussions in workshop mode with practicing senior Program Managers in the Insurance practice to brainstorm challenges, pain points and root causes.

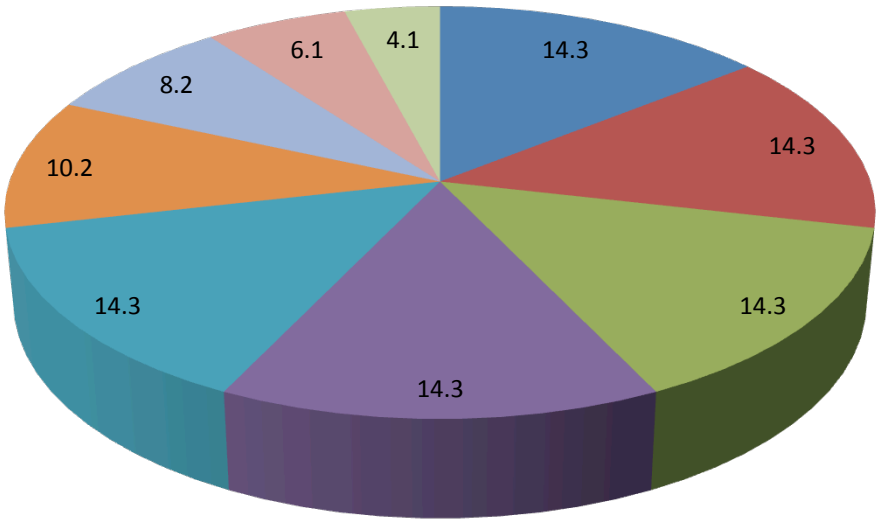
Diagnose : Survey results



To understand the ground level issues and challenges faced by the
Program Managers during Program Execution

Diagnose : Issues from Survey

Accounts Prioritized
Challenges expressed as %



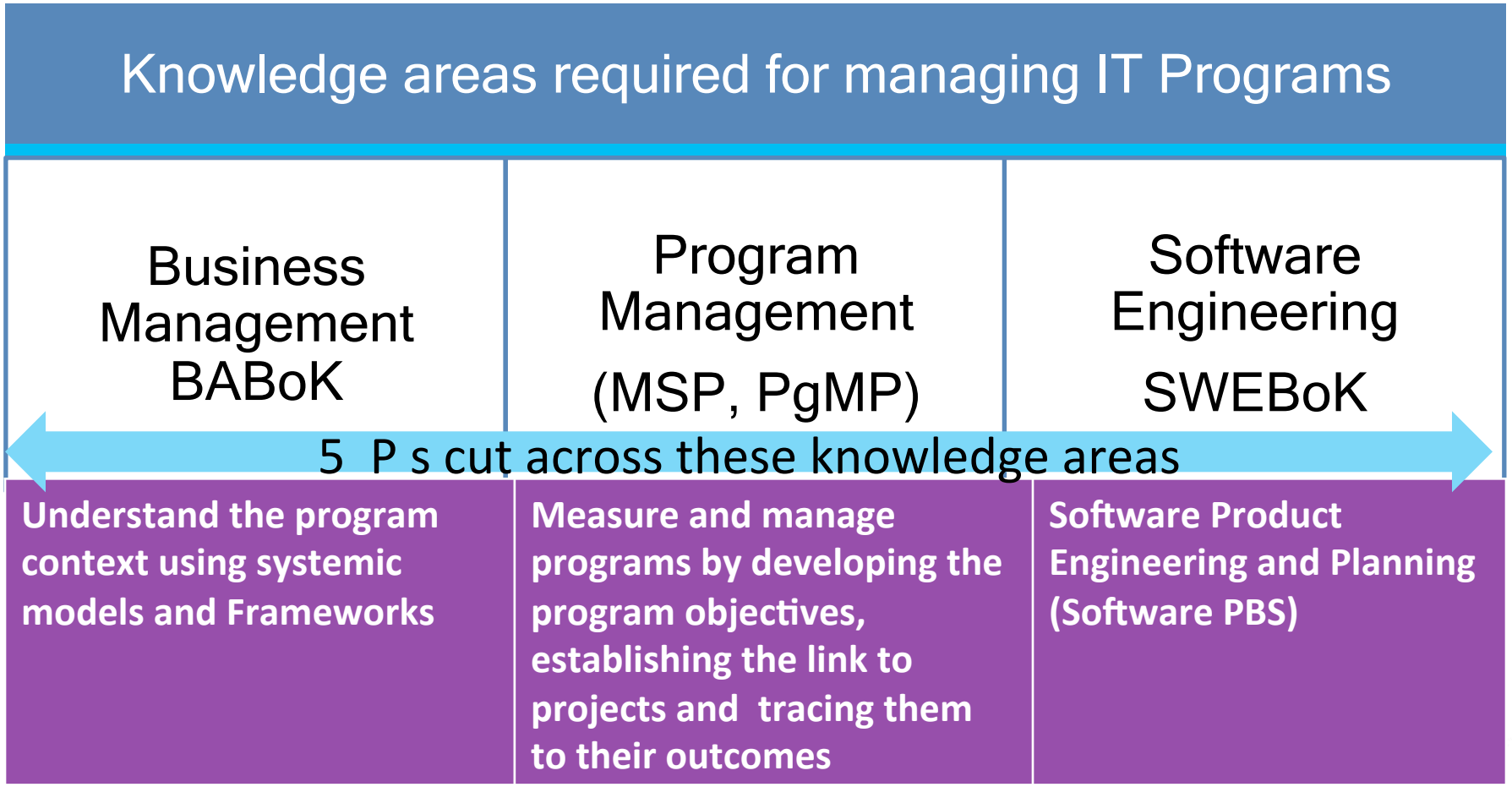
- Planning
- Risk Management
- Requirement Engineering
- Developing teams
- Communication
- Stakeholder Engagement
- Key Skills
- Change Management
- Estimation

Design Approach

Model Dimensions	Pre-planning Dimension or Context Understanding.	Planning Dimension	People Dimension	Process Dimension	Performance Dimension
Problem Areas	Understanding the context & domain of client(since IT services cater to different domains) Unclear strategy and blurred business issues. Key thrust areas of client business	Planning was designed on project philosophies, Program philosophy was missing Alignment with client business was missing. Ineffective planning and inadequate resources	Relevant competencies for program management was a gap. Low Motivation levels. Minimal Collaboration Lack of leadership, ownership and involvement	Generic Risk estimation process, Stakeholder management was a challenge Poor track record of delivery	No clear indicators for program performance No end to end traceability for execution.
Solutions Positioned (Indicative)	Identifying key levers of transformation using a cybernetic model. A cybernetics model to understand the background, concept and context of transformational programs helps in studying the influences between key entities and stakeholders to come up with the key levers of transformation.[3]	Scope. & Program Objectives were formulated or validated using SNAC (Stakeholders, Needs, Alterable and Constraints) analysis It was also positioned in studying stakeholder's interests and influences.[1]	Samarth for competence building[28] Appropriate models yet to be identified for behavioral aspects.	A risk identification and assessment process model based on Cybernetic principles was developed. A systemic stakeholder management process was designed.	Measuring performance Excellence of programs from the business perspectives of strategic planning, leadership, human resources, process management, knowledge management and business results.[4] and A model tracing objectives to results/benefits was designed.

Underlying philosophy

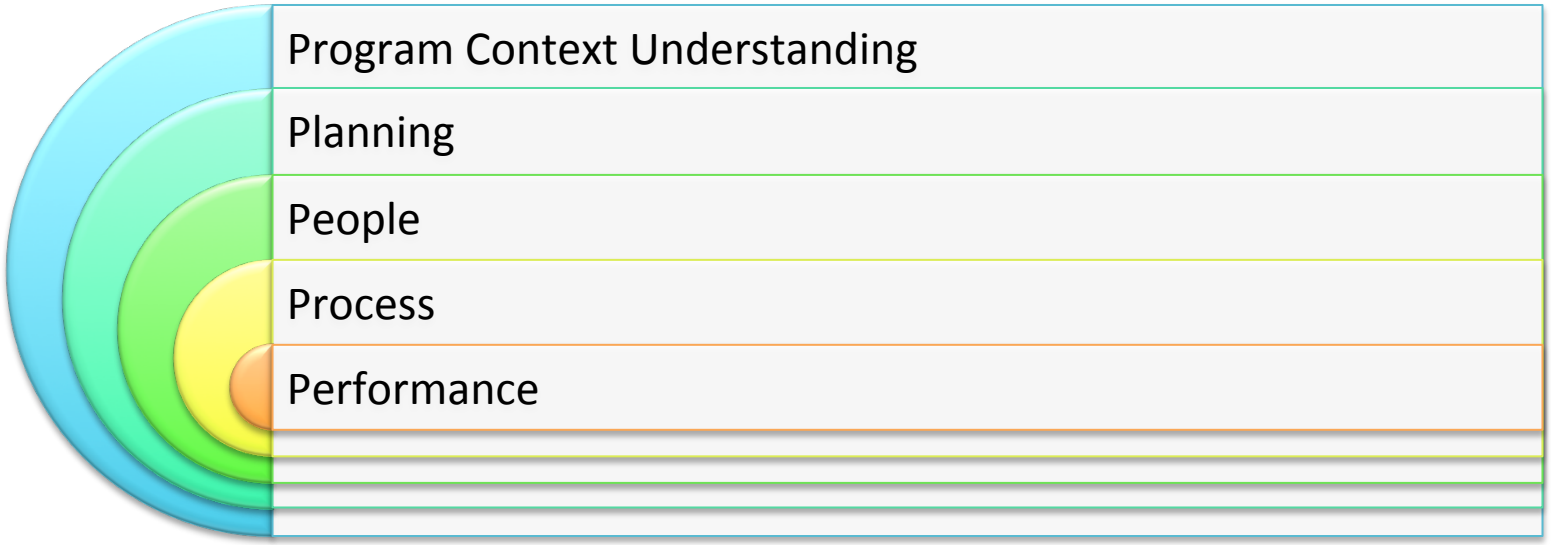
The approach for Program Management in an IT environment



PgmBOK	SWEBoK	BABoK + SE
Scope management	Software Requirements	Clients Business
Integration Management	Software Engineering Process	Value expectation by the client
Time Management	Software Design Software	Objectives to be realized
Cost management	Construction	Areas to be focused
Quality Management	Software Testing	Business Domain
Resource Management	Software Maintenance	
Communication Management	Software Configuration management	
Knowledge management	Software Engineering management	
Risk Management	Software Engineering Tools & methods	
Issue Management	Software Quality (QoPD)	
Release management		
Change management		
Configuration Management		

Designing solutions begins with the understanding of the nature of the program. The effectiveness of these solutions is dependent on how the interactive nature of the program is understood. This is possible only when the program situation is explained within its domain of existence. Hence the need for domain understanding is crucial in attempting to build solutions to complex problems.

Proposed Framework overview



Understand the Program context
Define Planning Artifacts
Build people competencies
Understand Processes
Measure Program Success
++++some more…

What do the 5Ps cover

- Planning requires an understanding the program context.
- Program context is understood in terms of
  - The system and boundary of the program
  - The objectives to be met by the program
  - The challenges of the program
  - Identifying stakeholder needs
  - Define the measures to assess the program
- Planning aspects related to
  - Program measures and outcomes
  - Risk Identification and management
  - Stakeholder Engagement
  - Scope
- Process aspects (associated with aspects of planning)
  - Risk Identification process
  - Stakeholder Engagement process
  - Planning process

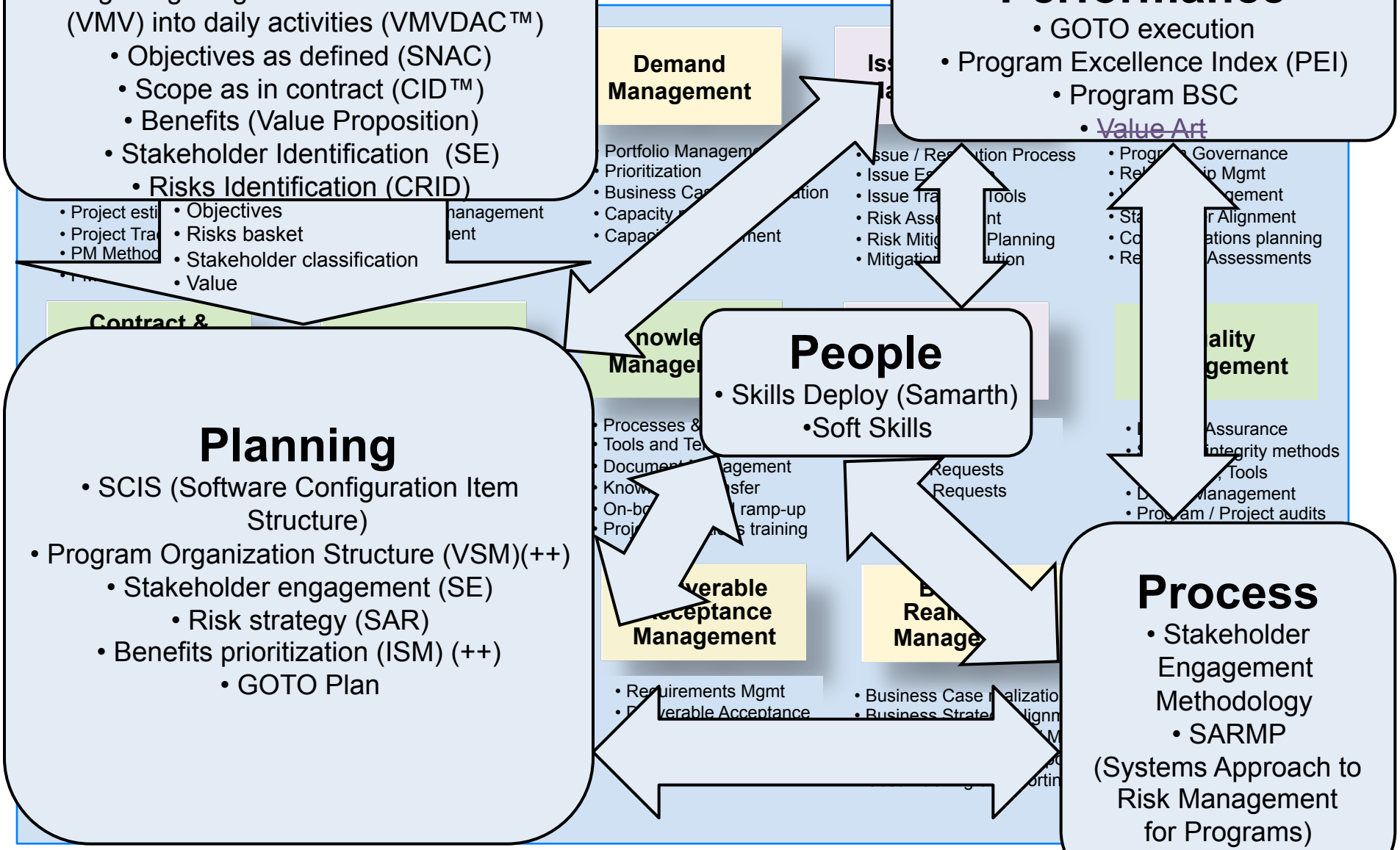
What do the 5Ps cover

- Performance
  - Program Excellence Index (PEI) assessing programs qualitatively
  - GOTO tracing program objectives
- People related aspects
  - PM competencies (Samarth)
  - Soft skills

IMPrOVe IT (Integrated Framework for managing Programs Objectively & Viably for IT)

Program Context Understanding
- Integrating Program Vision/Mission/Values (VMV) into daily activities (VMVDAC™)
- Objectives as defined (SNAC)
- Scope as in contract (CID™)
- Benefits (Value Proposition)
- Stakeholder Identification (SE)
- Risks Identification (CRID)

Performance
- GOTO execution
- Program Excellence Index (PEI)
- Program BSC
- Value Art



People
- Skills Deploy (Samarth)
- Soft Skills

Planning
- SCIS (Software Configuration Item Structure)
- Program Organization Structure (VSM)(++)
- Stakeholder engagement (SE)
- Risk strategy (SAR)
- Benefits prioritization (ISM) (++)
- GOTO Plan

Process
- Stakeholder Engagement Methodology
- SARMP (Systems Approach to Risk Management for Programs)

Design for Program Management

	4	3	2	1				1	2	3	4	5	6	7	8	9	10	11
7		x			7	Manage Resources - (Resource Loading)	7	x			x							
6	x				6	Identify, Assess and Manage Risks	6		x									
5	x				5	Identify, Analyze and Manage Issues	5						x					x
4		x			4	Program Plan Execution, Monitoring and Control	4	x	x	x	x	x	x	x	x	x	x	
3		x			3	Program Planning (Estimating/Scheduling /Staffing)	3											
2		x	x		2	Program Scope Engineering (SPBS)	2	x	x	x	x	x	x		x	x	x	
1				x	1	Program Initiation	1	x	x	x	x	x	x		x	x	x	
	4	3	2	1		Program Strategic Actions		1	2	3	4	5	6	7	8	9	10	11
	To identify, assess and manage program risks and issues effectively	To ensure effective and well-defined program estimation, planning, execution and controlling	To ensure effective program scope engineering	To ensure effective and well-defined program initiation	Program Strategic Objectives		Program Targets & Measures	% of Associates' Goals that are set by the end of Apr for H1 and by the end of Oct for H2 in the program	IPMS usage index	IQMS deployment index	No. of PEEP sessions conducted by Program Manager/GL as applicable for onsite/offshore	% compliance to SLAs	% Compliance to BCP/DR	# of projects on time in the program	# 0f projects on budget in the program	% On Time Delivery in program	% Effort overrun (Estimated effort vs Actual effort)	# of open/wip issues in tracker in EQ Portal
	4	3	2	1		Program Outcome Measures		1	2	3	4	5	6	7	8	9	10	11
1					1	Reduced TCO (Total Cost of Ownership)	1								x			
2					2	Delighted customers	2								x			
3					3	Improved Producitivity	3											
4		x	x	x	4	Improved Efficiency	4											
5					5	Improved Accuracy	5		x	x								
6					6	Improved performance	6											
7					7	Increase in revenue	7								x			
8					8	Program Objectives aligned with Business strategic objectives	8	x	x		x							x
9					9	Rationalized/Streamlined/Transformed Organization	9											
10					10	Ease of Convenience in Complying with legal/mandatory requirements	10						x					
11	x				11	Program benefits transitioned to BAU operations	11					x				x	x	
12					12	Program Benefits Realized	12											
	4	3	2	1				1	2	3	4	5	6	7	8	9	10	11

THANK YOU

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