

PM WORLD TODAY – FEATURED PAPER – DECEMBER 2009

## Enterprise IT Program Integration management framework

Program Integration management framework along the axis of predecessor and successor project(s) for deliverables coherence and associated program implications, recommendations and best practices

*By Ravi Yerabolu, PMP*

### **Purpose and Target Audience**

Purpose of this technical white paper is to describe the challenges, and elucidate the Integration management framework/approach and best practices in the program context of the application area. Project management team, IT PMO, QA are the primary target audience groups of the Enterprise IT delivery organization.

### **Abstract**

The objective of this technical white paper is to orchestrate the Integration process between predecessor and successor projects in a IT program context (refer Applicability to target application area), to elucidate the approach for addressing the challenges within the application area.

### **Applicability to target application area:**

This IT Program Integration Framework can be customized for any target IT Program whose scope is organized in the form of predecessor and successor projects, where-in the deliverables/results/outputs produced by predecessor project(s) have direct/in-direct implications on

1. the quality of deliverables/results/outputs produced by the successor projects
2. meeting successor projects CTQ's and/or goals
3. achieving enterprise IT program goals/objectives and/or CTQ's

### **Challenges and Program pitfalls:**

1. How do the project management team insure, deliverables (format and content) produced by predecessor project(s) are commensurate to the level-of details expected by the successor projects SDLC initiation processes relative to the successor project deliverables.

2. How does the project management team identify and develop the integration processes between the predecessor and successor project(s) to address the challenge stated in point 1 above.
3. How does project management team develop and articulate the cascaded implications on the successor project(s) deliverables in particular and impact on the program CTQ's/Goals execution because of required deliverable(s) coherence being not met by the deliverable(s) produced by predecessor project(s) along the axis of context, in a program context.
4. How does the project management team insure, the positive risks identified in the above Application area stated, are integrated into the project risk management and into the SDLC activities to address the challenges stated above.
5. How does the IT program management team insure, successor project(s) stakeholders have endorsed the format/content of the deliverables produced by predecessor project(s) in a program context.
6. What is the approach of the IT project management team/IT PMO, for Roles and Responsibilities matrix of the deliverables produced by predecessor project(s) across the SDLC, factoring-in the diverse stake holder groups contribution/participation of all the dependent successor project in a IT program context.

This technical white paper, addresses above challenges in the application area described above through using the **LEXICON (referenced in Page 2)** for common understanding of target audience, by

1. Demonstrating Enterprise IT Program Integration Framework in a general IT program scope (applicable to all IT programs which has characteristics described in the Application area above).
2. And later Instantiates the orchestrated Enterprise IT Program Integration framework in Implementing Basel II Program in banking/financial industry at a certain level of details.

## **Introduction to Enterprise IT Program Integration Framework articulated using the LEXICON described above**

Along the Axis of context <sup>1</sup> and deliverable coherence <sup>2</sup> of the deliverables produced by predecessor project(s) <sup>3</sup> relative to the deliverable structure/content/details warranted by the Initiation processes of the dependent successor project(s) <sup>4</sup> in a program context, this paper illustrates the implications program integration management deficiencies along the axis of context and non-existence of process rigor to address the harmonization of deliverables between predecessor and successor project(s).

The paper focal point is on the inherent need for the IT PMO (when exists) or the Program Management team to develop insights along the axis of context for a program based on business domain and program complexity to design and develop/tailor the Project Management processes to enhance the chances of success of program and justify the ROI on the Predecessor project(s) in particular and program objectives in general.

The paper layouts, a typical program and projects configuration along the Axis of context and best practices that can be applied to a program in context by tailoring to business domain and program complexity in general. Later instantiates the discussed program management framework along the axis of context for deliverable coherence between the predecessor and successor project(s) in Basel II business domain for a business line.

Suggests best practices by showing important dimensions to address the expected process rigor aligned with the Roles, Responsibilities and Accountability matrix to turn the negative risks into positive risks there by increasing the chances of program success.

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<sup>1</sup> **Axis of context:** In particular when the predecessor project(s) charter scope is to produce deliverables which include but not limited to

1. To produce deliverables to address roadmap implementation scope in the form of subsequent successor projects.
2. Organizations engage in self assessment of its current state processes, methodologies, data, systems, policies relative to target regulations/compliance goals/objectives that must be achieved as a result of executing successor project(s) scope of the program.
3. set the implementation direction and accelerate the definition, planning process for program's successor project(s)
4. Identifying existing data gaps, process gaps as part of gap assessment and address the data gaps through the execution of the successor project(s).

Deliverables/results/outcomes of the Predecessor project(s) that are expected to be fed as the project inputs for the Initiation processes of the Successor project(s) in a program context. Predecessor project(s) deliverables coherence and data sufficiency in retrospect of the scope of work that need to be performed as part of the Successor project(s), in a program context and Program Management team role/IT PMO (when exists) for overall program success.

<sup>2</sup> **Deliverable coherence:** Structure, content and data sufficiency of the Predecessor project(s) deliverables in relation to the expected details that are warranted by Successor project(s) Initiation processes as project Inputs for the scope of work and deliverables the successor projects are expected to be produced.

<sup>3</sup> **Predecessor project(s):** Project or Project(s) which are executed to produce deliverables/results/outcomes which are imperative for the Initiation processes of the Successor project(s) for overall program success.

<sup>4</sup> **Successor project(s):** Project or Project(s) which are executed in a later point in time relative to the Predecessor project(s), whose Initiation processes requirements include deliverables/results/outcomes produced by the corresponding closing processes of the Predecessor project(s) for overall program success.

In retrospect of current limitations in program management practices along the axis of context and deliverable coherence in the context of predecessor and successor project(s), this paper concludes with the capability of the illustrated Program Integration framework its reusability, modular & extensibility and customizable factors with an illustration of Instantiation of the program Integration framework in a Basel II program context.

## **Rationale for integration framework applicability in project and program contexts**

In a project context, one of the factors contributing to project success is the integration plan of the predecessor and successor activities/tasks and the structure/deliverables/results/outcomes produced by the predecessor task on which the successful execution of the successor activity/task and quality of the deliverable/result/outcome is dependent.

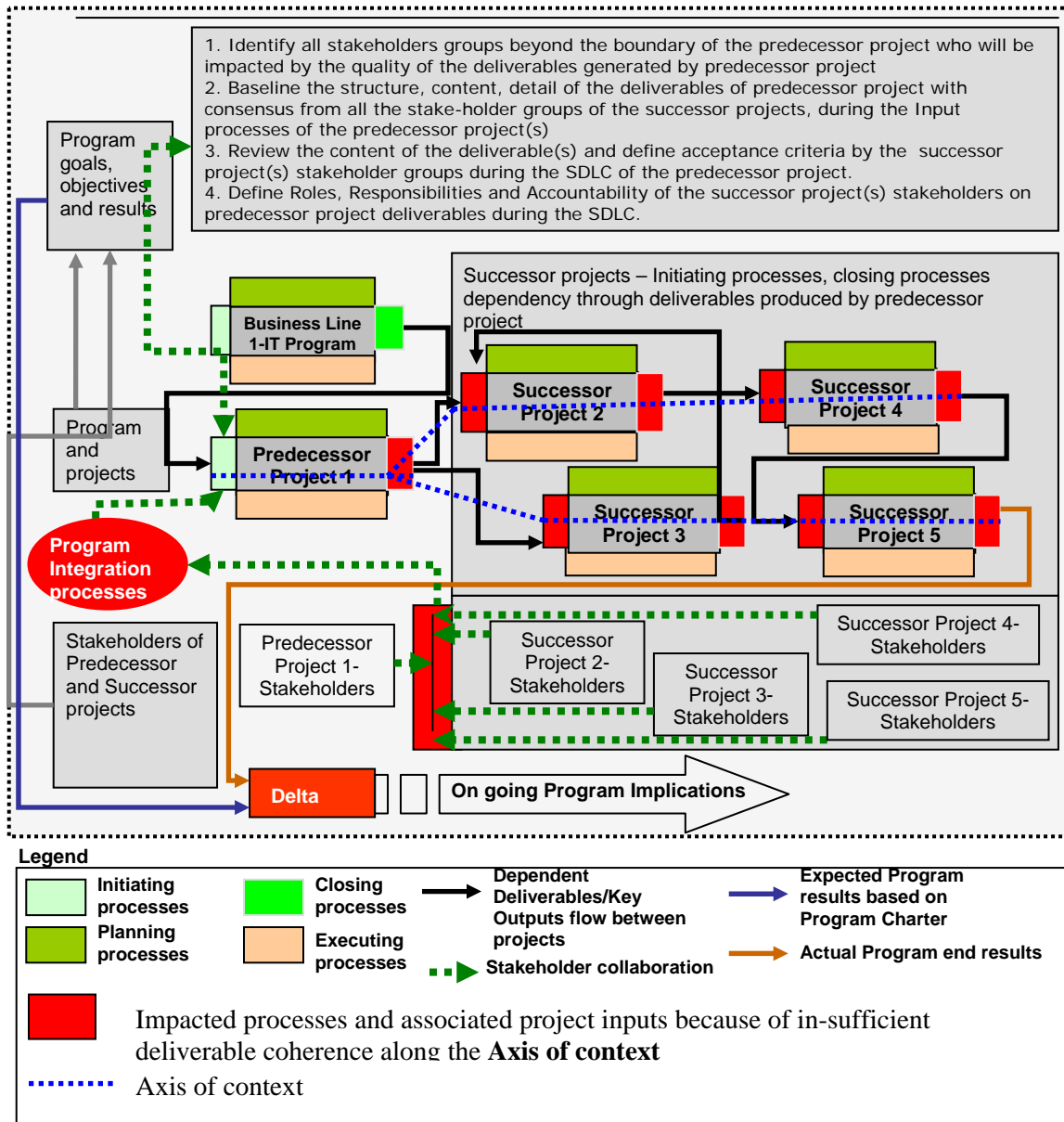
If we transpose project context with program context and predecessor and successor activities with-in a project to deliverable coherence of the deliverable(s) produced by Predecessor project(s) relative to the deliverable(s) structure/content /data sufficiency detail warranted by the Initiation processes of the successor project(s), which are executed in two different time windows by different Vendor(s), how well the predecessor project(s) deliverables has deliverable coherence relative to the deliverable coherence warranted by the Initiation processes of the successor project(s) scope that need to be executed along the axis of content will be one of the important factor contributing to the program success.

This program Integration framework along the axis of context for deliverable coherence between predecessor and successor project(s) is created using bottom-up approach i.e as a

1. Result of experiencing deficiencies in the current program management practices with specific focus along the axis of context for deliverable coherence between predecessor and successor project(s).
2. Deliverable content in-sufficiency of the deliverables produced in predecessor project(s) which are designated as project inputs for the Initiation processes of the successor project(s) of a program, which were identified by the successor project(s) stakeholders late in the program life cycle.
3. Experienced cascaded implications on the successor project(s) execution because of required deliverable(s) coherence being not met by the deliverable(s) produced by predecessor project(s) along the axis of context, in a program context
4. Lack of clearly defined responsibilities/accountabilities of IT PMO's(when exists)/Program management along the axis of context in the program.
5. Experienced impacts on the execution of successor project (s) and associated negative impacts on the program goals/objectives.

### Enterprise IT Program Integration framework illustration along the Axis of context and deliverable coherence between predecessor and successor project(s)

Below artifact illustrates the program layout with multiple projects and their associated processes. Inter-project dependencies through the deliverables are representative and don't reflect all the possible dependencies. Program Implications along the axis of context for deliverable coherence is highlighted in RED.



In IT programs, where success of the Successor projects(s) are dependent on the deliverable(s) content produced by the Predecessor project(s), IT PMO function or the IT

Management function bestowed with the responsibility of over-all success of the program, must acknowledge the need for building processes to harmonize the deliverable content by considering the stakeholders of all the dependent successor projects .

### **Program Implications with reference to the Axis of context and deliverables coherence**

Based on the maturity of the project management life cycle and process rigor to address the integration of the deliverables content between the predecessor and dependent successor project(s) will lead to negative program risks which include but not limited to

1. Successor project's stakeholders discover late in the program time-line, the predecessor project deliverables structure/content are not as warranted/desired by the Input processes of the successor projects of the program.
2. Constraining dependent successor project(s) execution capability because of data in-sufficiency/deliverable(s) coherence of the deliverables produced by the Predecessor project(s).
3. As closing processes of the predecessor project(s) coast to completion, vendors walk-away by producing deliverables whose structure and content are not commensurate with the desired deliverable(s) coherence for the Initiation processes of the successor dependent projects.
4. Executive management, questions about ROI on the predecessor project(s) deliverable(s) and program management function or IT PMO (when existing) accountability.
5. Late discovery by successor project's stakeholders about the non-agreement on the deliverables structure and content produced by the predecessor's project(s) and thus creating negative risks for the successor project(s) from the Initiation phase.
6. Cascaded Implications on the quality of the deliverable(s) of the successor projects because of the predecessor project(s) deliverables not meeting the desired deliverable(s) coherence which are used as project inputs for the Initiation processes of the successor project(s).
7. Severely impacting organization's ability to achieve program goals and objectives stated in the Program charter.

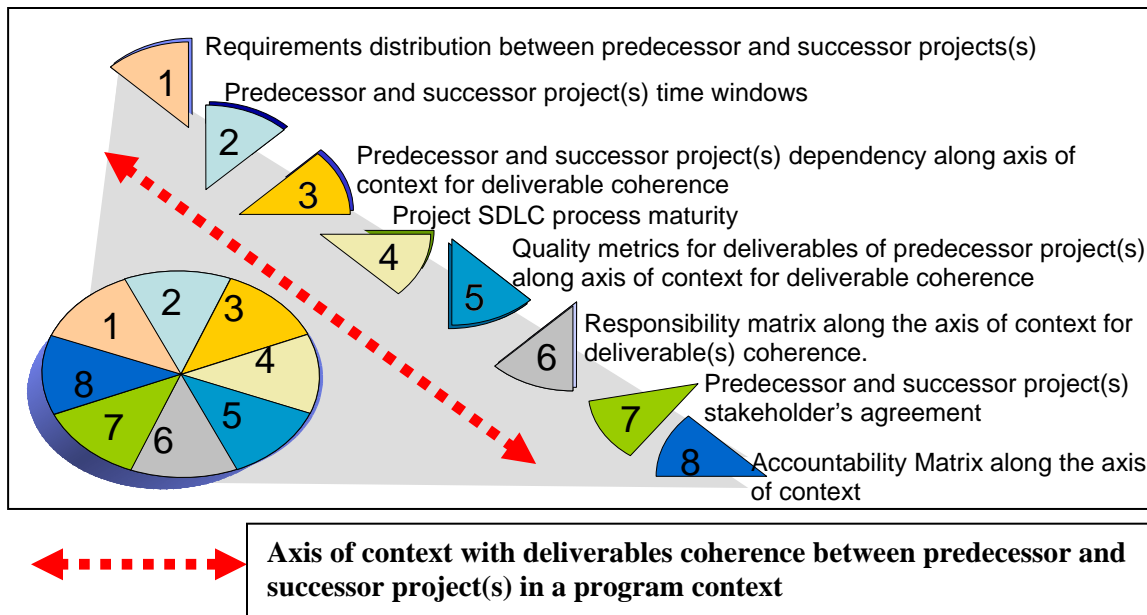
8. Credibility and accountability issues of the program management team/IT PMO team (when exists).

## **Recommendations and best practices for IT Program Integration Framework**

### **Recommendations/best practices for maximizing the chances of success of the program include but not limited to**

1. Determine how requirements were being distributed or spread across predecessor and successor project(s) in a program scope.
2. Identify the time-windows in which predecessor and successor project(s) are planned to be executed.
3. Identify the predecessor and successor project(s) in the program track using deliverables structure & content or results/outcomes along the axis of dependency for deliverable coherence.
4. Examine the maturity of the SDLC (processes involved in the Software Development Life Cycle) in which the projects will be executed.
5. Because of the implications the quality of deliverables of the predecessor project(s) can have on the successor project(s) and program results, define the metrics used to measure the success or failure of the deliverables produced by the predecessor project(s) along the axis of context for deliverable coherence.
6. Programs where multi vendors are engaged in executing the predecessor project(s) scope of work , identify the deliverables oriented responsibilities of the vendors involved with focus along the axis of context for deliverable coherence.
7. Harmonize the deliverables structures/content intended to be produced by building agreement with the stake-holders of all the successor project(s) of the program who are downstream users of the predecessor project(s) deliverable(s).
8. Based on the complexity and size of the program and identified risks, tailor the processes for roles/responsibilities and accountability matrix with the results from point 3 as the inputs.

The best practices stated above are represented as 8 levers in below illustration



It's only logical to say, one of the Key element of a program success is shared understanding among the successor project stakeholders with the predecessor project(s) stakeholders on the structure, content of the deliverables and the data sufficiency contained in the predecessor's deliverables commensurate to the project inputs/input deliverables warranted by the Initiating processes of the dependent successor project(s).The eight levers stated above provides the Integration framework for the program management/IT PMO function in a program context to increase the success of achieving the program goals from the axis of discussion in context.

**Responsibility, Accountability matrix along the Axis of context and deliverable coherence between predecessor and successor project(s):**

**Recommendation & Best Practices for turning the Negative risks into Positive risks along the axis of context for deliverable coherence include:**

Below is illustration to represent the deliverable oriented Roles, responsibilities and accountability matrix in the program context involving multiple vendors engaged to execute predecessor and successor project(s) scope of work during different implementation time-periods in a program context.

This concept extends the traditional Roles, responsibilities matrix by Integrating the IT PMO or IT function bestowed with similar responsibilities into the accountability dimension from the data sufficiency axis of the deliverables produced in the predecessor project(s) to serve as inputs for the Initiation processes of the dependent Successor project(s).

Program

Project	Deliverables	Vendor A	Vendor B	Vendor C	Vendor D	Sponsoring Business Line/Down stream User Group	Successor dependent project(s) Stakeholders	Internal IT Team	Program management/ IT PMO
Predecessor project 1	Business Requirements	R				S,C,I,IR,DR,DS	S,C,I,IR,DR,DS	S,C,I,IR,DR,DS	A
Predecessor project 1	Functional Requirements	R				S,C,I,IR,DR,DS	S,C,I,IR,DR,DS	S,C,I,IR,DR,DS	A
Predecessor project 1	Data Requirements		R			S,C,I,IR,DR,DS	S,C,I,IR,DR,DS	S,C,I,IR,DR,DS	A
Successor Project 1	Design Artifacts			R		S,C,I,IR,DR,DS	S,C,I,IR,DR,DS	S,C,I,IR,DR,DS	A
Successor Project 2	Systems Requirements Specification(s)					S,C,I,IR,DR,DS	S,C,I,IR,DR,DS	R	A
Successor Project 3	Implementation					S,C,I,IR,DR,DS	S,C,I,IR,DR,DS	R	A
Successor Project 4	Test and UAT				R	S,C,I,IR,DR,DS	S,C,I,IR,DR,DS		A
Successor Project 4	Productionalization					S,C,I,IR,DR,DS	S,C,I,IR,DR,DS	R	A

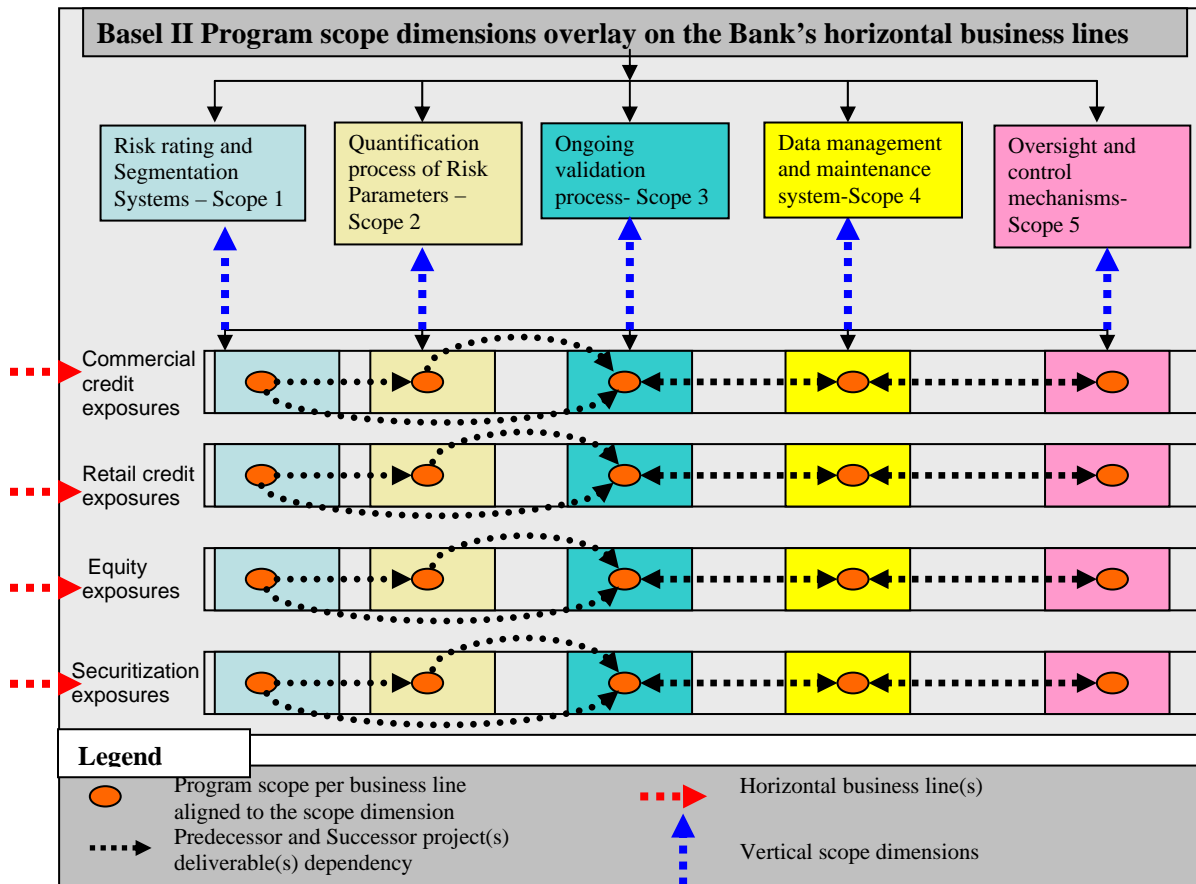
A- Accountable for the deliverables structure and content produced by Predecessor project(s) from the data sufficiency axis of the deliverables as expected by all the stakeholders of the dependent Successor project(s).  
The buck stops here.

- R = Responsible - Person or Team who Owns the item, the "doer"
- S - Supports - Written backing
- C - Consulted - Discussed with, asked for views
- I - Informed - Must be notified but need not be consulted
- IR- Responsible to participate in the Initiation processes of the project(s)
- DR- Responsible for Deliverable(s) Review during Executing processes of the project(s)
- DS- Responsible for Deliverable(s) Sign-off during the Closing processes of the project(s)

### Instantiation of the Enterprise IT Program Integration framework along the Axis of context for deliverable(s) coherence in Basel II program :

#### Basel II program matrix with vertical scope dimensions and horizontal business lines overlay

Illustrated below is a typical layout matrix of the vertical scope dimensions of the Basel II program’s overlay on the horizontal business lines of Bank(s)/Financial Institution(s), with vertical scope dimensions being anchored against qualification requirements related to Banks advanced IRB systems which must incorporate five interdependent components in framework for evaluating credit risk and measuring regulatory capital mandated by US Federal Register.



Note: The above illustration doesn't intend to represent complete Basel II scope and associated details.

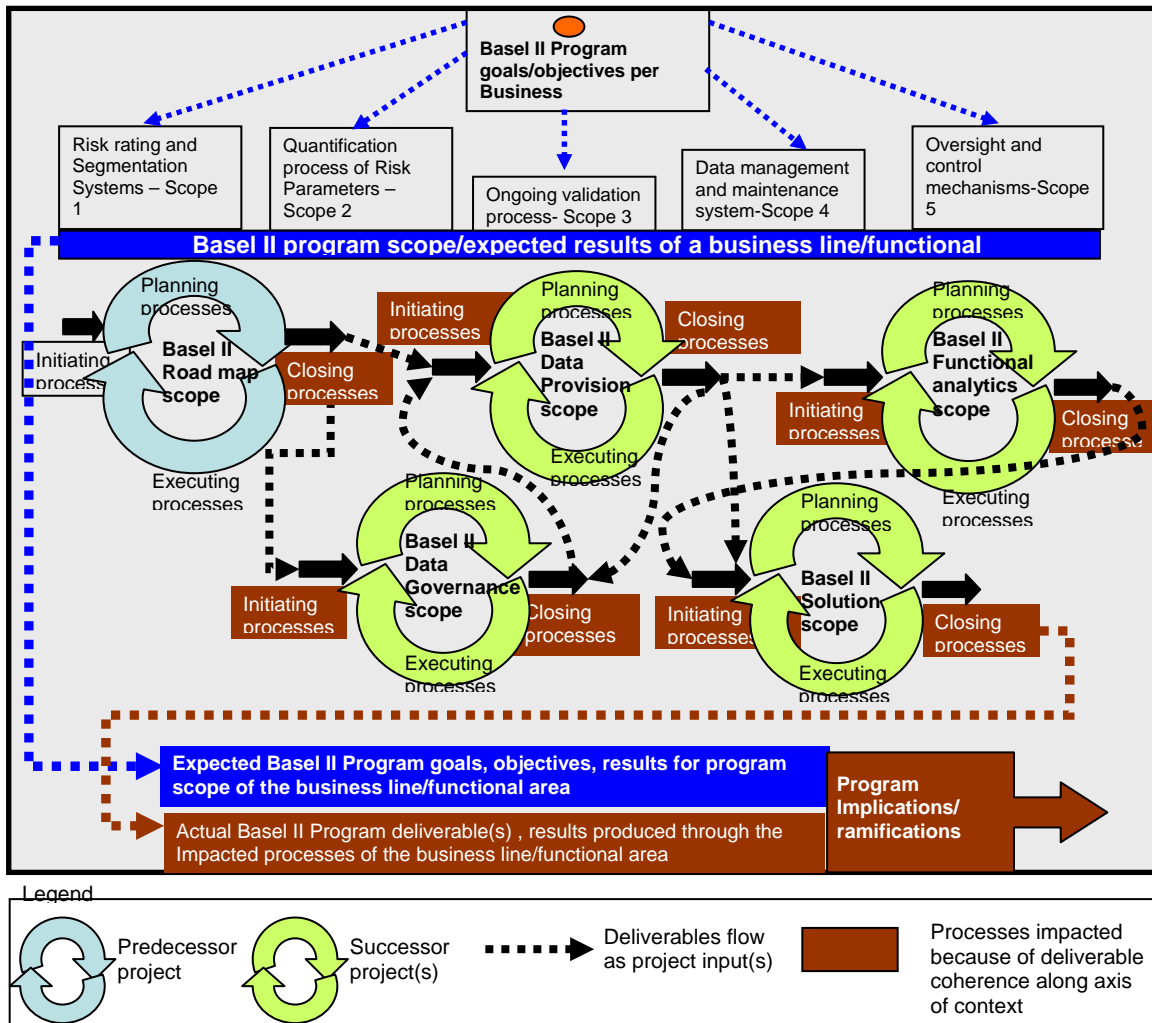
At the intersection of the horizontal business line(s) and vertical scope dimension(s), the program scope per business line<sup>5</sup> is broken-down to a series of predecessor and successor project(s) that are planned to be executed to produce Basel II program results.

In the next section, program scope per business line is further decomposed into a set of predecessor and successor project(s) which are extrapolated around the Initiation, Planning, Execution, Monitoring & Controlling and Closing process groups to demonstrate the characteristics along the axis of context for deliverable(s) coherence between predecessor and successor project(s).

<sup>5</sup> Program scope per business line: Scope of program for the business line in context which constitutes of planned execution of a set of related predecessor and successor project(s) in a coordinated manner with deliverable coherence to generate the expected program results.

### Basel II program scope within a business line decomposition along the axis of context to elucidate the characteristics of the deliverable coherence and implications on program goals/objectives

Based on the above Integration framework of deliverables of predecessor’s project(s) and successor project(s) in a Basel II program context, the program scope of a business line is expanded into a set of predecessor and successor projects with deliverable coherence along the axis of context is depicted below.



- Note:
1. Illustration does not intend to represent all possible deliverable(s) flows between the predecessor and successor project(s)
  2. Monitoring and control processes are not shown
  3. Illustration above doesn't intend to show all the predecessor and successor project(s) in BASEL II context.
  4. Deliverable(s) direction flows in the illustration are not intended to represent complete details .

**Recommendations and best practices to mitigate the program implications caused due to improper deliverable(s) coherence along the axis of context must include, but not limited to**

1. Identification of all the stake-holders groups beyond the predecessor project boundary who are expected to use the deliverables/results/outcomes as inputs to the Input processes of all successor project(s) in the program.
2. Baseline the structure, content, detail of the predecessor project(s) deliverable(s) with consensus from all the stake-holder groups of the successor project(s) with the program scope as the perimeter.
3. Review the content of the predecessor project(s) deliverable(s) and define acceptance criteria based on the agreement reached by all successor project(s) stake-holder groups.
4. Mandate the successor project(s) stakeholder groups apart from the predecessor project(s) stakeholder group to be part of the decision making.
5. Deliverables/results/outcomes generated by each predecessor project(s) need to exit the project closing processes with sign-off from the successor project(s) stake-holder after accepting the deliverables.

**Enterprise IT Program management/IT PMO function (when exists) in the context of a program**

1. Be mandated to manage the deliverables/results/outcomes generated by predecessor project(s) have deliverable content details which must be commensurate to the details warranted by the inputs processes of all successor project(s) in the program.
2. Integrate the accountability dimension to the existing roles and responsibilities matrix to the predecessor project(s) deliverables along the axis of context for deliverable(s) coherence.
3. Identify processes which are complementary to the program complexity, stakeholder diversity and tailor the processes to suit the program goals with the desired rigor to focus on the deliverables coherence with regard to the structure and content of the deliverables needed by the Initiation processes of all successor project(s) which will be executed in the future time-window.

**Current limitations in program management practices along the axis of context and deliverable coherence in the context of predecessor and successor project(s)**

Lack of objectivity and common reusable program integration framework in the current program management practices to address the deliverable(s) coherence issue along the axis of context in the retrospect of predecessor and successor project(s) scope, introduces a negative risk for accomplishing program goals.

Above limitations tends to become more pronounced based on the factors which include but not limited to ( there by constraining achievement of Program goals and objectives)

1. Complexity of the program(s)
2. Number of participating vendors in the execution of the program scope
3. Relative time gap between the Predecessor and Successor project(s) execution timeline.
4. Existence of IT PMO or Program Management Office and its responsibilities and accountabilities against the program deliverables.
5. Stakeholder groups diversity of the program in context.
6. Organizational culture
7. Maturity of the project SDLC processes

## Conclusion

### Objectivity and Capability of the Illustrated Enterprise IT Program Integration framework

Program management team/Project Management practitioners/IT PMO's need to harmonize the processes along the axis of context for maximizing deliverable coherence between the predecessor and successor project(s) and integrate into the SDLC processes in which the program is executed to maximize the chances of program success.

Above program integration framework has the capability and objectivity for the program management team to develop insights into the perceived complexity of deliverables coherence<sup>6</sup> along the axis of context<sup>7</sup>, in the backdrop of the predecessor and successor project(s) of a program.

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<sup>6</sup> Structure, content and data sufficiency of the Predecessor project(s) deliverables in relation to the expected details that are warranted by Successor project(s) Initiation processes as project Inputs for the scope of work and deliverables the successor projects are expected to be produced.

<sup>7</sup> Deliverables/results/outcomes of the Predecessor project(s) that are expected to be fed as the project inputs for the Initiation processes of the Successor project(s) in a program context. Predecessor project(s) deliverables coherence and data sufficiency in retrospect of the scope of work that need to performed as part of the Successor project(s) ,in a program context and Program Management team role/IT PMO(when exists) for overall program success

## Reusability

The program integration framework along the axis of context for deliverable coherence between predecessor and successor project(s) can be reused and tailored based on the business domain and program scope and integrate the processes into project life cycle/program management methodology to further refine the objective commensurate with the program goals/risks.

## Modular & Extensible

The program Integration frame along the axis of context for deliverable coherence between predecessor and successor project(s) can be designed at program level for a give functional area/business line and expandable to include program scope of other functional/business lines.

## Customizable

The program Integration frame along the axis of context for deliverable coherence between predecessor and successor project(s) designed at program level for a give functional area/business line should be customized to address a particular program scope by assessing factors which include but not limited to

1. Business domain / functional area in which the program will be executed and program complexity
2. Maturity of existing project SDLC
3. Program governance
4. Stakeholder diversity of the program
5. Program integration processes into the project execution life cycle.

## Institutionalizing the IT program Integration framework at Organization/Enterprise level

This program integration framework can be customized/tailored with-in the business/functional and program scope perimeter aimed at designing the processes around the Initiation, Planning, Execution, Monitoring & Controlling and Closing process groups with the Integration process rigor commensurate to offset the complexity introduced along the axis of context for required deliverable coherence between predecessor and successor project(s).

Organizations and Project management tool vendors performing IT work and /or project/program management can customize and tailor the program integration framework along the axis of context for a program scope spread over predecessor and successor project(s), to integrate the derived processes into the project life cycle/program management methodology and institutionalize along the business and solution matrix to drive consistency, commonality and rigor across the program execution function of IT performing organization(s).

## Program Integration Management White Paper Lexicon:

Term	Description
Axis of context	<p>In particular when the predecessor project(s) charter scope is to produce deliverables which include but not limited to</p> <ol style="list-style-type: none"> <li>1. To produce deliverables to address roadmap implementation scope in the form of subsequent successor projects.</li> <li>2. Organizations engage in self assessment of its current state processes, methodologies, data, systems, policies relative to target regulations/compliance goals/objectives that must be achieved as a result of executing successor project(s) scope of the program.</li> <li>3. Set the implementation direction and accelerate the definition, planning process for program's successor project(s)</li> <li>4. Identifying existing data gaps, process gaps as part of gap assessment and address the data gaps through the execution of the successor project(s).</li> </ol> <p>Deliverables/results/outcomes of the Predecessor project(s) that are expected to be fed as the project inputs for the Initiation processes of the Successor project(s) in a program context. Predecessor project(s) deliverables coherence and data sufficiency in retrospect of the scope of work that need to be performed as part of the Successor project(s) ,in a program context and Program Management team role/IT PMO(when exists) for overall program success.</p>
Predecessor project(s)	Project or Project(s) which are executed to produce deliverables/results/outcomes which are imperative for the Initiation processes of the Successor project(s) for overall program success.
Successor project(s)/Dependent Successor project(s)	Project or Project(s) which are executed in a later point in time relative to the Predecessor project(s), whose Initiation processes requirements include deliverables/results/outcomes produced by the corresponding Closing processes of the Predecessor project(s) for overall program success
Deliverables	Deliverables are produced as outputs from the processes performed to accomplish the project work planned and scheduled per the project management plan against an established clear measure of success of the Predecessor project in coherence with project inputs desired by the successor project(s) stakeholders
Deliverable Coherence	Structure, content and data sufficiency of the Predecessor project(s) deliverables in relation to the expected details that are warranted by Successor project(s) Initiation processes as project Inputs for the scope of work and deliverables the successor projects are expected to be produced.
Initiation processes	Group of processes that facilitate the formal authorization to start a new project or a project phase
Planning processes	Group of processes that defines and refines objectives, and plans the course of actions required to attain the objectives and scope that the project was undertaken to address.
Executing processes	Group of processes that Integrates people and other resources to carry out the project management plan for the project.
Monitoring and Controlling processes	Group of processes that regularly measures and monitors progress to identify variances from the project management plan so that corrective actions can be taken when necessary to meet project objectives.
Closing processes	Group of processes which formalizes acceptance of the deliverables, results, outcomes, products, services and brings the project or project phase to an orderly end.
Positive risks	Risks which have potentially positive impacts on project objectives
Negative risks	Risks which have potentially negative impacts on project objectives

Stakeholders/Stakeholder groups

Individual and organizations that are actively involved in the project, or whose interests may be affected as a result of project execution or project completion.

**About the Author:*****Ravi Yerabolu, PMP***

Author



Ravi Yerabolu is a PMP in good standing. He has 10+ years of experience in DW/BI, Client server computing environment. His past experience compasses of working in different roles on the areas of solution design, technology, consulting and project management of Projects, Programs, Operations type of Scope of work in multi-vendor engagement on a Global Delivery model. Major areas of expertise include project life cycle design, integration management, scope management, proof of concept, systems integration, systems re-engineering in services/manufacturing and Governance Risk & compliance(GRC)business domains. Mr. Yerabolu is an IT professional with comprehensive technical/ business skill set and expertise in IT PMO, BI/DW IT Road-map development projects, Proof-of-concept, Enterprise data warehouse solutions, Enterprise data governance projects, Enterprise Metadata management solutions, Enterprise Data quality management process improvement projects, data warehouse systems integration , project management, leadership, testing/quality assurance, software development, project procurement management. The Author can be reached at [raviyerabolu@gmail.com](mailto:raviyerabolu@gmail.com)