


PROJECT EXCELLENCE & MANAGING PROJECT PERFORMANCE


Exceeding Best Practice

a) WHO AM I




- 1. Project Environ
- 2. Alignment
- 3. PP Metrics
- 4. Project Excellence
- 5. Scope & WBS
- 6. Input to Schedule
- 7. Milestones & Planning
- 8. Cost Time Integration
- 9. Progress Curve Diagnostics

- John Maddalena
- MSc in Mechanical Engineering
- 22 years in Power Generating Industry
 - Conventional
 - Nuclear
 - LWR
 - AGR
- Project Management Consultant
- Joined PaCE in 2007
 - Director of Project Services
 - Joined SAPCI through PaCE




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b) The Project Challenge



- 1. Project Environ
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From a recent study of mega projects (>\$1bn), 90% were found to have overrun

March 2007 Megaproject Latest

- Central Artery/Tunnel – the Big Dig;

-1991 Initial Cost Estimate rev 3; estimate	\$ 5.19bn	202% increase from pre work
-1994 Cost/Schedule Update 6; budget	\$10.47bn	140% increase from control
-2003 Cost/Schedule Update 10;	\$14.63bn	

Source: Massachusetts Turnpike Authority- 2007


- The Channel Tunnel (EuroTunnel);

-1987 Project Release Control Budget;	£ 3.2bn	294% increase from initial control budget
-1994 Tunnel Opens; construction completion	£ 9.4bn	123% increase from
-2003 EuroTunnel debt;	£11.6bn	


Source: Project Finance-EuroTunnel - 2005

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c) AGENDA: Project Performance

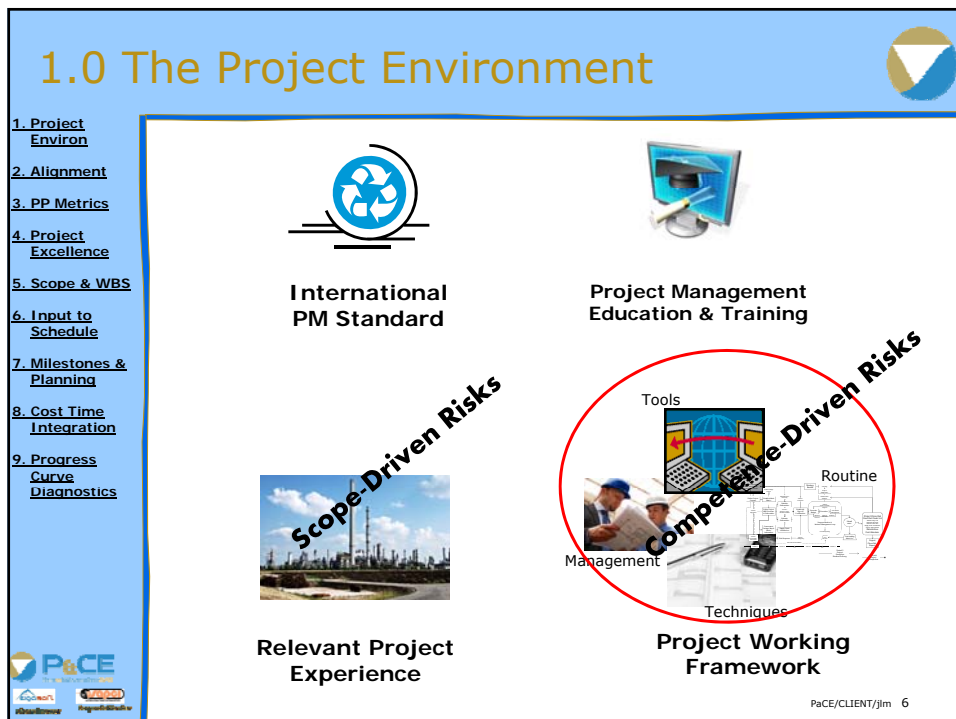
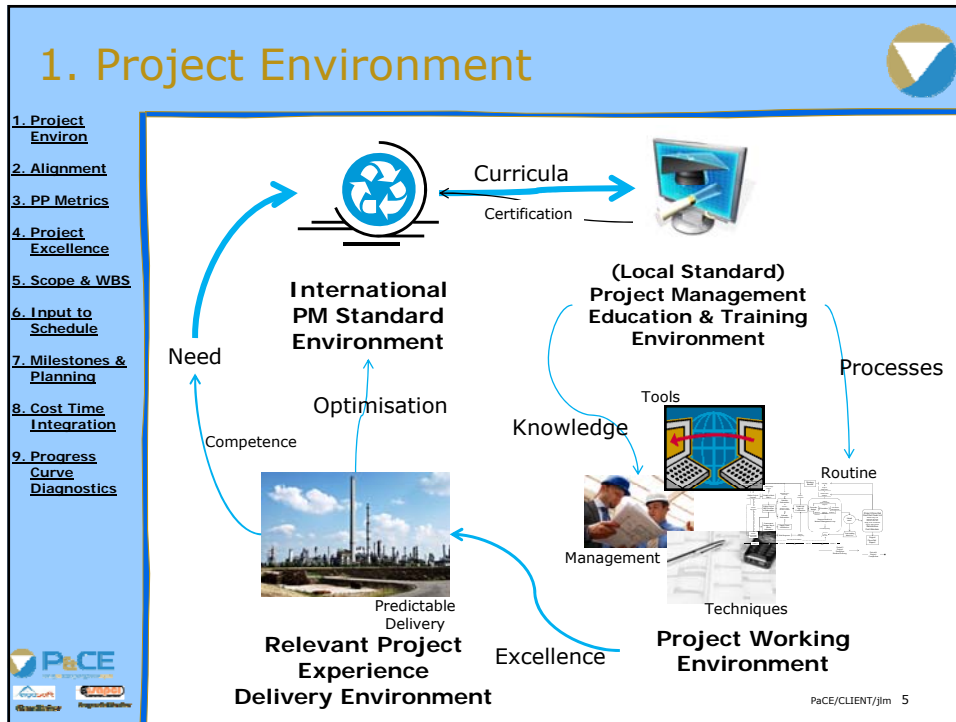


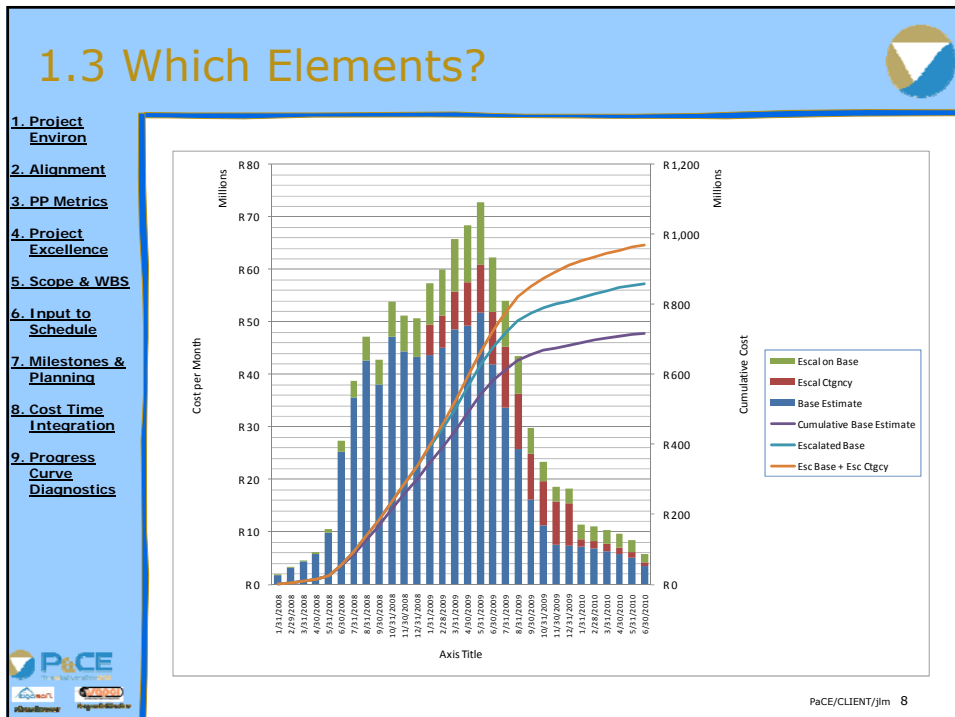
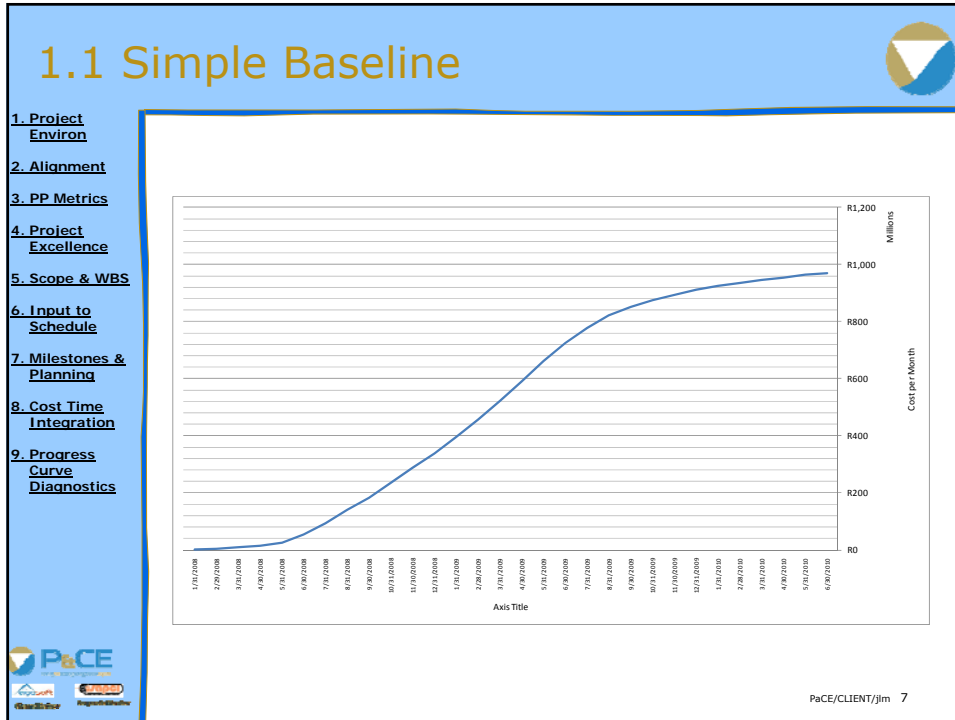
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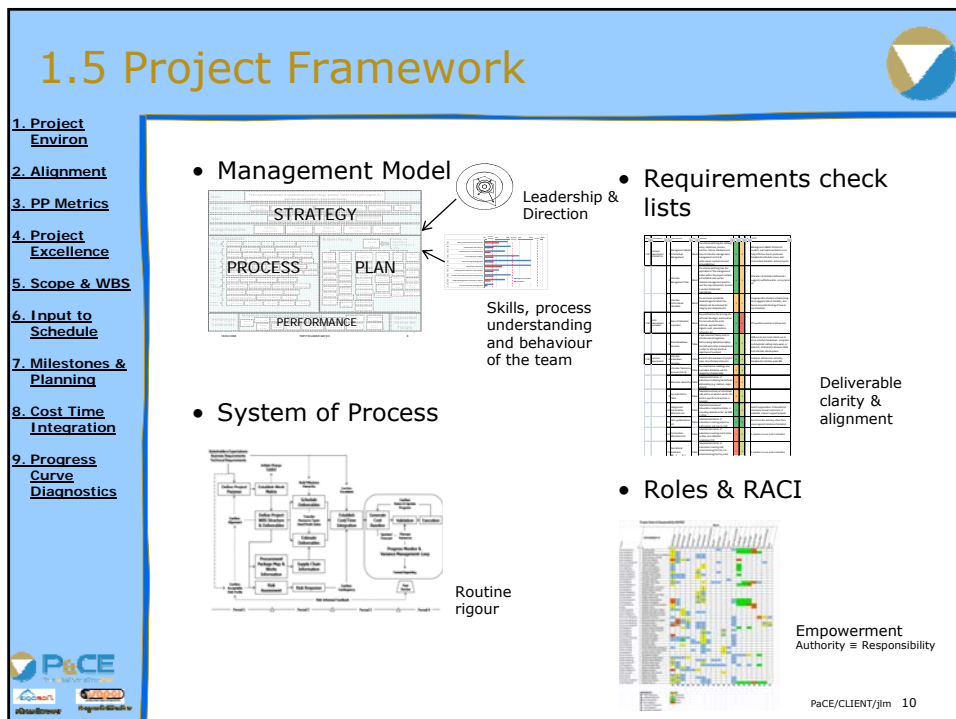
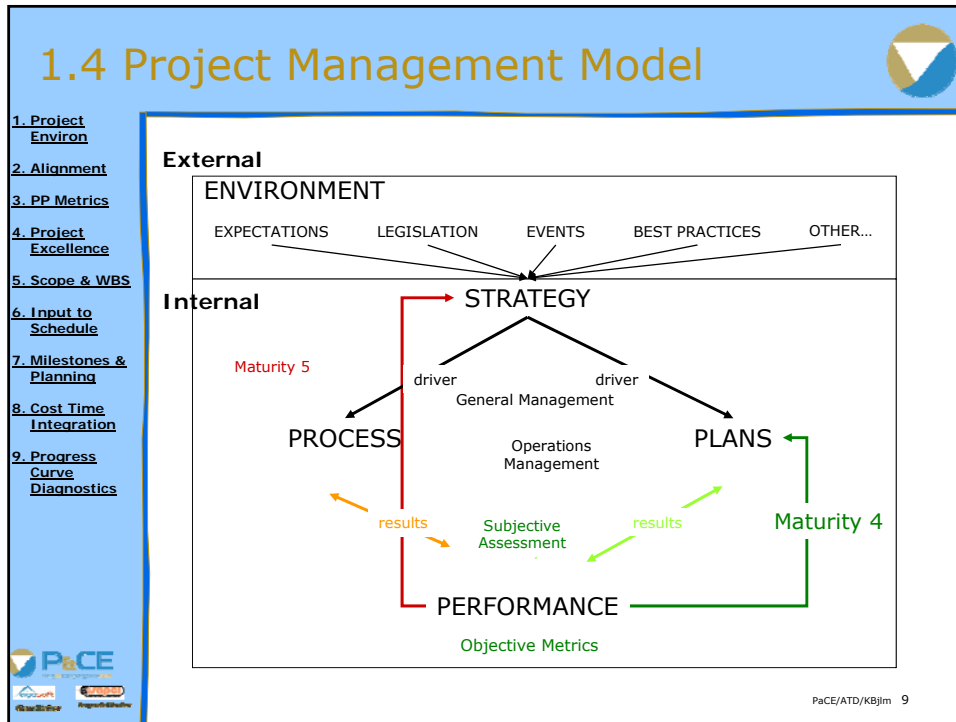


1. The Project Environment
2. Alignment
3. Project Performance Metrics
4. Project Excellence
5. Scope & WBS
6. Input to schedule
7. Milestones and planning
8. Cost Time Integration
9. Progress Curve Diagnostics

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2.0 Alignment

1. Project Environ
2. Alignment
3. PP Metrics
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Get Yourself Aligned **Align Others**

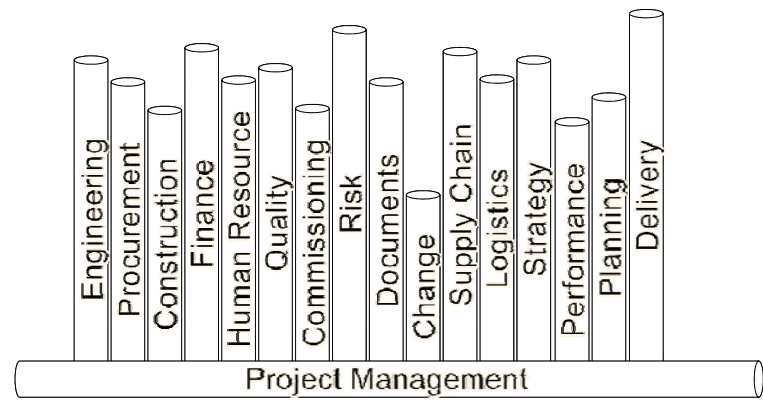
Alignment = (25% Communication) + (75% Data Structures)




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2.1 Knowledge Domains

1. Project Environ
2. Alignment
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Alignment = (25% Communication) + (75% Data Structures)



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2.2 Project Charter Matrix



- 1. Project Environ
- 2. Alignment
- 3. PP Metrics
- 4. Project Excellence
- 5. Scope & WBS
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- 9. Progress Curve Diagnostics

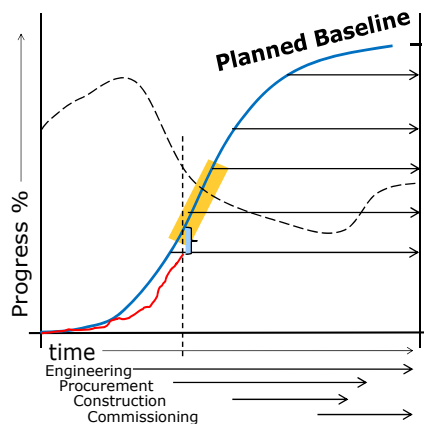
Count of ID	S#	Why						Total
		1	2	3	4	5	6	
MM	PROJECT	Governance	Alignment: Strategy	Alignment: Process	Data & Configuration Mgmt	Compliance	Performance	
1. STRATEGY	PROJECT MANAGEMENT FRAMEWORK	1						1
	PROJECT STAKEHOLDERS	1						1
	PROJECT RISK MANAGEMENT	1						1
	PROJECT EXECUTION STRATEGY		1					1
	PROJECT ENVIRONMENT			1				1
	PROJECT FUNDING			1				1
	PROJECT PURPOSE			1				1
2. PROCESS	PROJECT BASE CURRENCY			1				1
	PROJECT BASIS of COMPLIANCE			1				1
	PROJECT BASIS of ENGAGEMENT			1				1
	PROJECT BASIS of ESCALATION			1				1
	PROJECT OVERHEAD RECOVERY			1				1
	PROJECT PERFORMANCE METHOD			1				1
	PROJECT TOTAL COST STRUCTURE			1				1
	PROJECT REPORTING			1				1
	PROJECT CODE				1			1
3. PLAN	PROJECT BUSINESS PLAN					1		1
	PROJECT CONTINUITY PLAN					1		1
	PROJECT MANAGEMENT PLAN					1		1
	PROJECT QUALITY PLAN					1		1
	PROJECT RISK PLAN					1		1
4. PERFORMANCE	PROJECT CRITICAL DECISION POINTS						1	1
	PROJECT MILESTONES						1	1
	PROJECT COST PERFORMANCE						1	1
	PROJECT LEARNING						1	1
Total		3	4	8	1	5	4	25

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3.0 Project Performance Metrics



- 1. Project Environ
- 2. Alignment
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- Managing project performance using financial criteria is a failing strategy
- Using target budget value as limit, is ineffective until it is reached
- Breaking this down to smaller chunks, does not change the principle (control strategy)
- Projects are a dynamic continuum, and require a dynamic metric to manage performance
 - Variance,
 - Tolerance on variance

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3.1 Progress Status & Forecast

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- What is the strategy that will avoid slip?
- What action will ensure period progress drives above planned rate?
 - What are the risks?
 - What is the impact?

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4.0 Project Excellence

Project Excellence = Predictability

Project Capability

Project Delivery

Project Services

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4.1 Sustainable Excellence

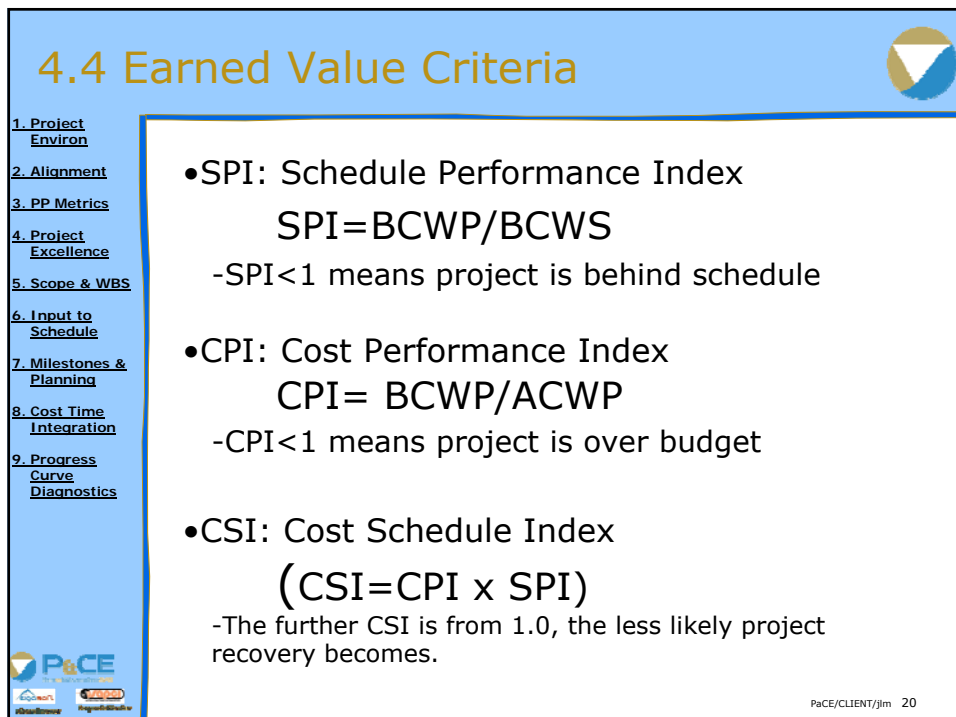
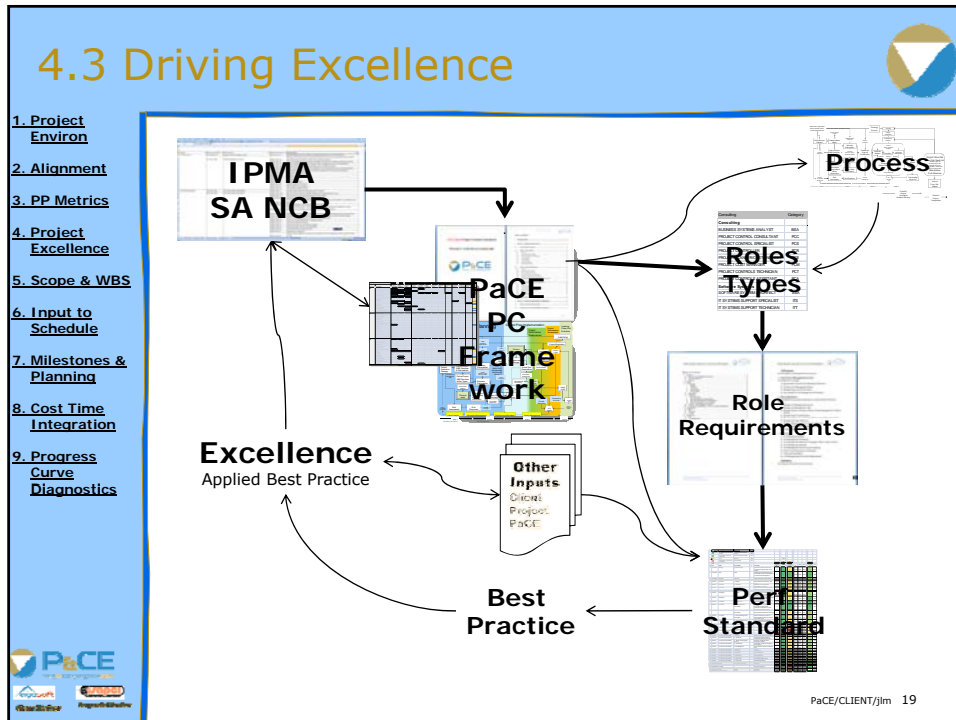
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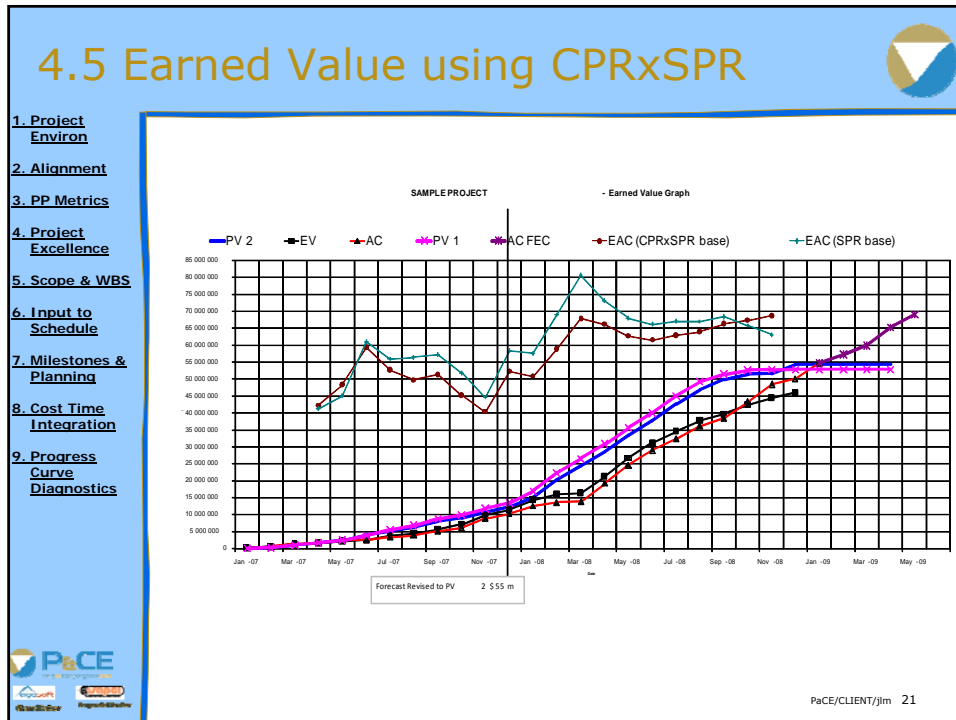
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4.2 Performance Management

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4.6 Making Projections

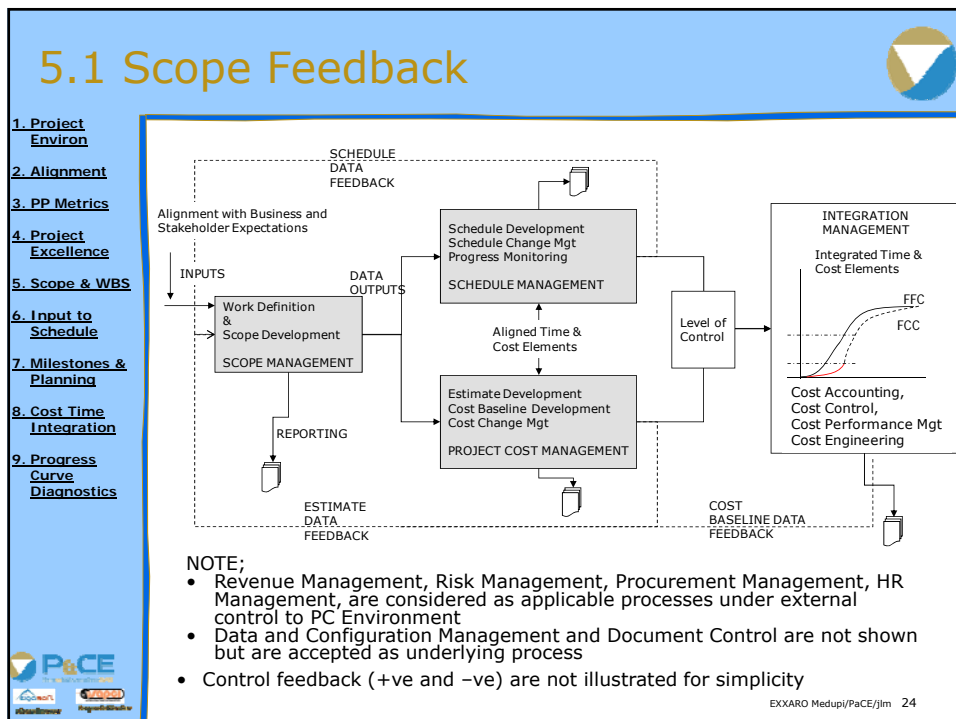
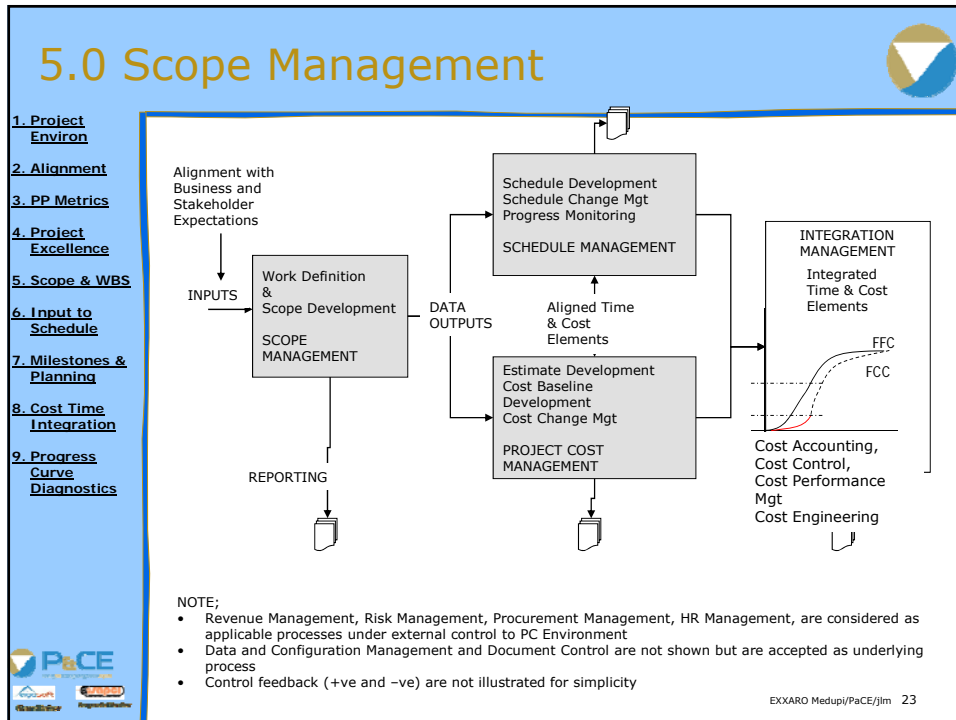
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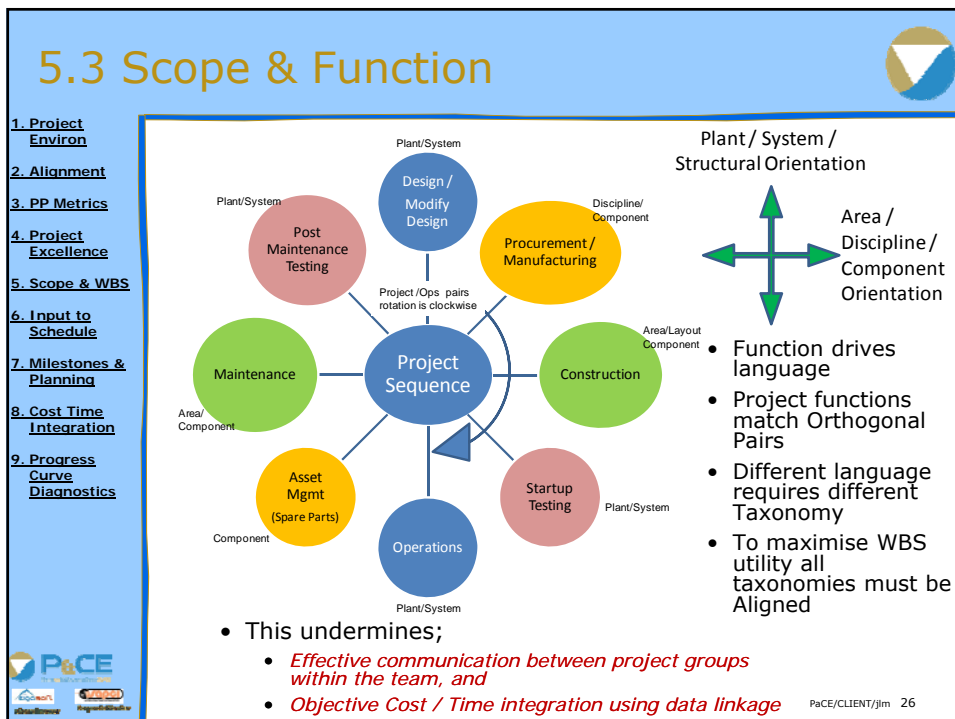
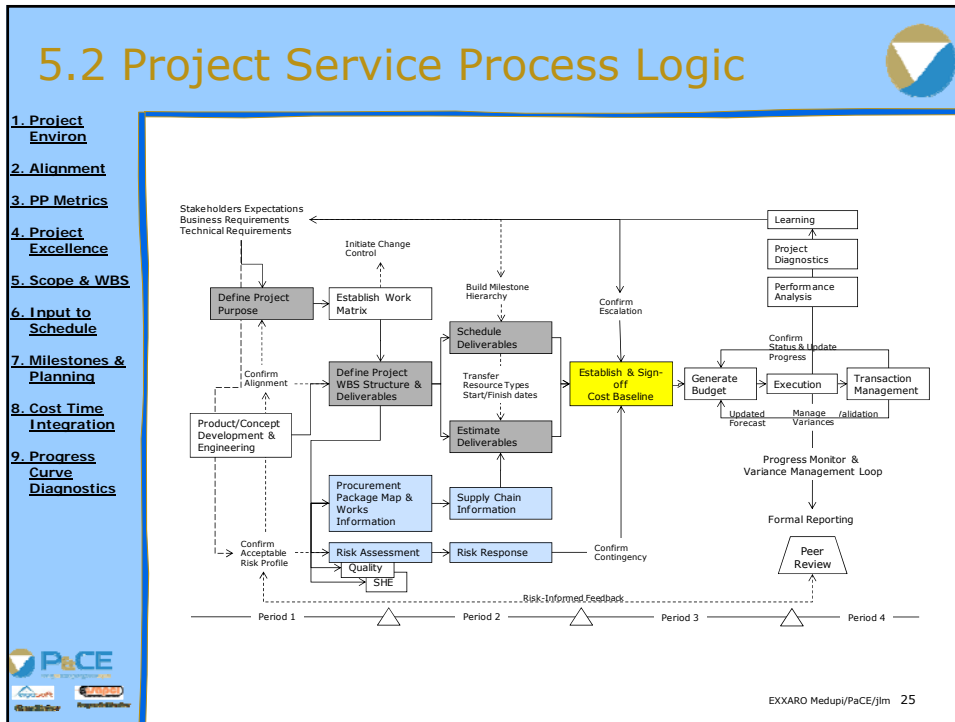
- Once a project is 10% complete, the overrun at completion will not be less than the current overrun.
- Once a project is 20% complete the CPI does not vary from its current value by more than 10%.

The CPI and SPI are statistically accurate indicators of final cost results.

- Source: Defense Acquisition University

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5.7 Work Matrix

1. Project Environ
2. Alignment
3. PP Metrics
4. Project Excellence
5. Scope & WBS
6. Input to Schedule
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		Life Cycle PROCESSES						
		1	2	3	4	5	6	7
PRODUCT TYPE	G&S CATEGORY	Engineering	Procurement	Construction	Commissioning	Operations	De-Comm	Management
1	Direct Goods	MINE						
2		PROCESS PLANT						
3		STOCKYARD						
4		HOUSING & INFRASTRUCTURE						
5	Direct Services	Geophysical Survey						
6		External Consultants						
7		Security & Access						
8	Indirect Goods	Temporary Infrastructure						
9		Construction Site Utilities & Services						
10		IT Infrastructure						
11		Consumables						
12		Construction Equipment						
13		Commissioning Spares						
14	Indirect Services	IT Support						
15		Project Governance						
16		Stakeholder						
17		Interfaces						
18	Direct OTHER	Land Rights						
19		Licensing & Permits						
20		Other Fees						
21	Indirect OTHER	Incidental Travel						
22		Incidental Accommodation						
23		Business Continuity						
24		Contingency						
25		Escalation						

WORK SUMMARY
ARRAY

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5.7 Work Matrix

1. Project Environ
2. Alignment
3. PP Metrics
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21	Indirect OTHER	Incidental Travel						
22		Incidental Accommodation						
23		Business Continuity						
24		Contingency						
25		Escalation						

Actions e.g
Engineering, Procurement, Construction, Management

Goods & Services e.g.
Concentrator
Stockyard

WORK SUMMARY
STATEMENTS

Example 1; Concentrator Engineering
Example 2; Stockyard Construction

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5.9 Deliverable Matrix

1. Project Environ
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Deliverable Types
REPORT SPEC CALC DRAWING CERTIFICATE

DELIVERABLE SUMMARY STATEMENTS

Example; **Concentrator Engineering Report**

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6.0 Input to Schedule

1. Project Environ
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Integration Management
Integrated Time & Cost Elements
FCC
FCC
Cost Accounting, Cost Control, Cost Performance Mgt, Cost Engineering

NOTE;

- Revenue Management, Risk Management, Procurement Management, HR Management, are considered as applicable processes under external control to PC Environment
- Data and Configuration Management and Document Control are not shown but are accepted as underlying process
- Control feedback (+ve and -ve) are not illustrated for simplicity

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6.1 WBS & SBS

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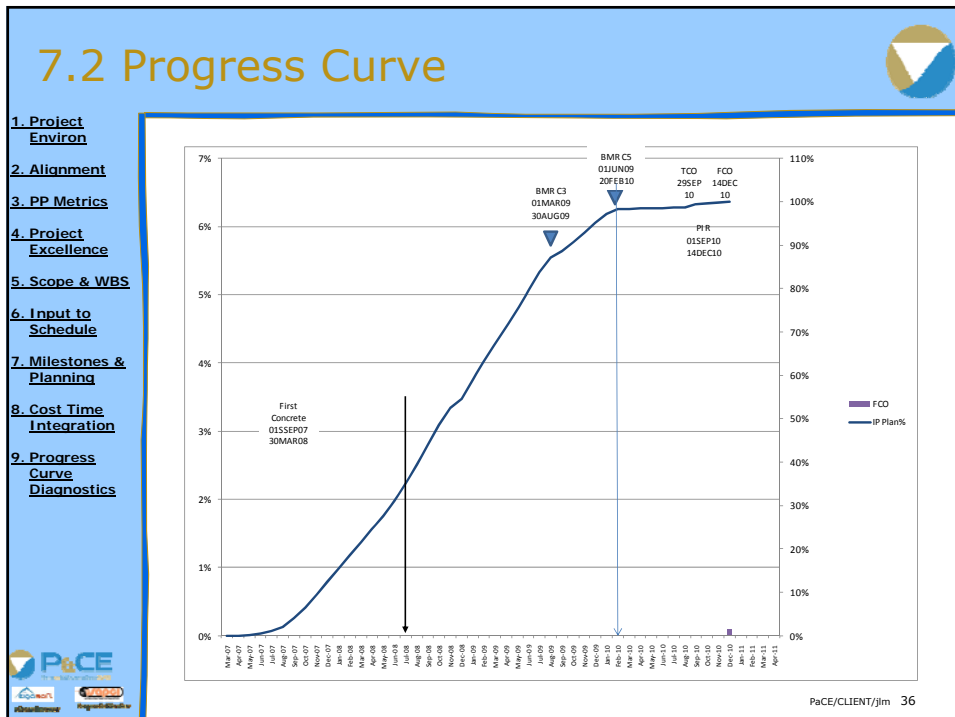
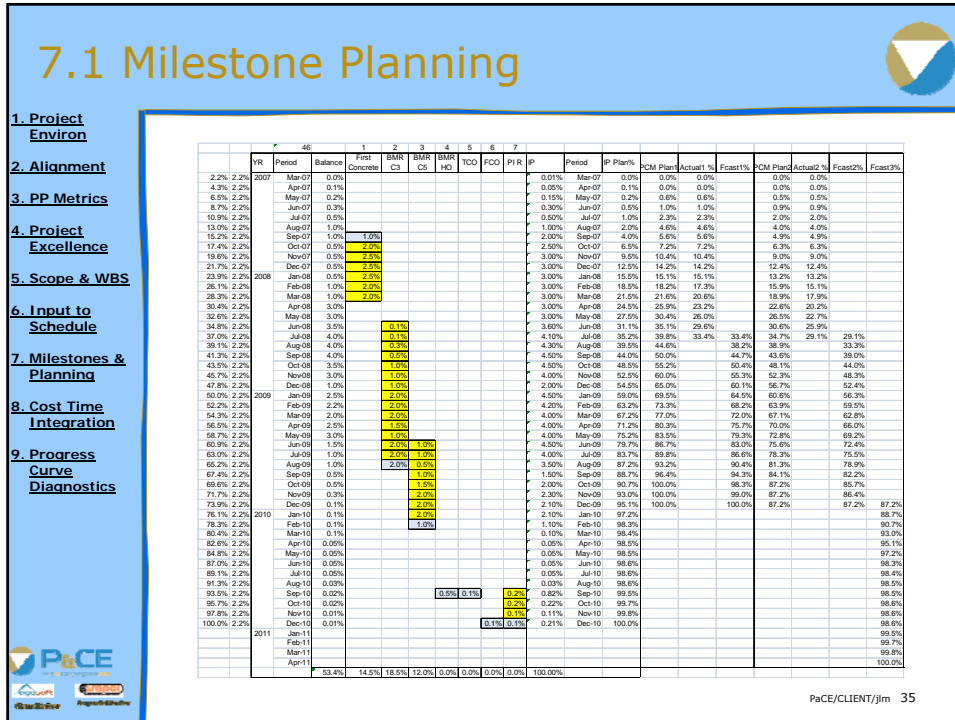
7.0 Milestone Hierarchy

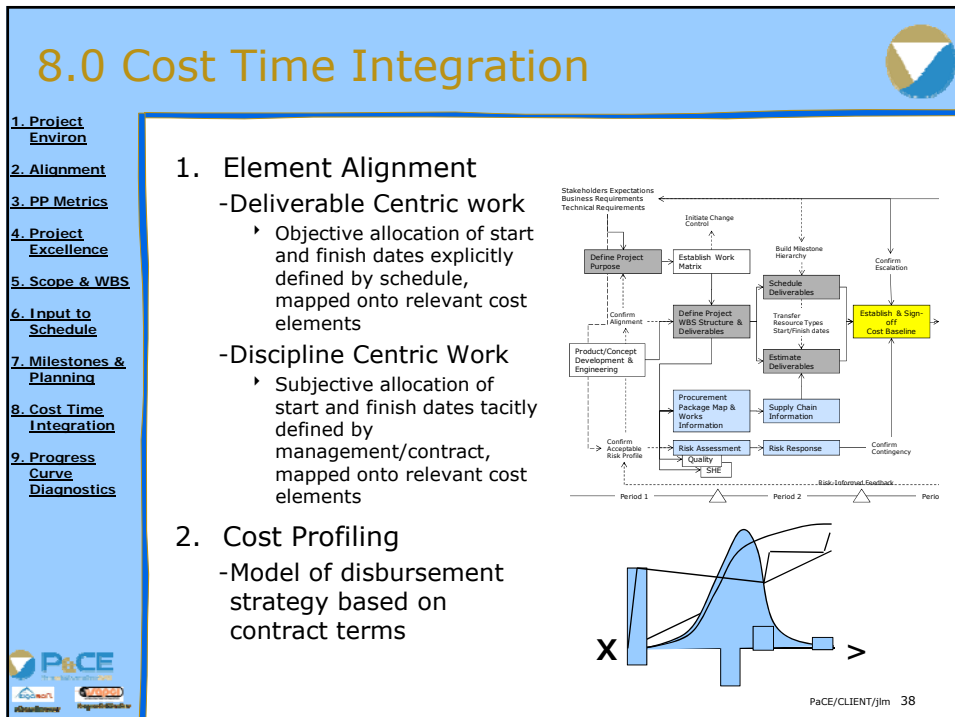
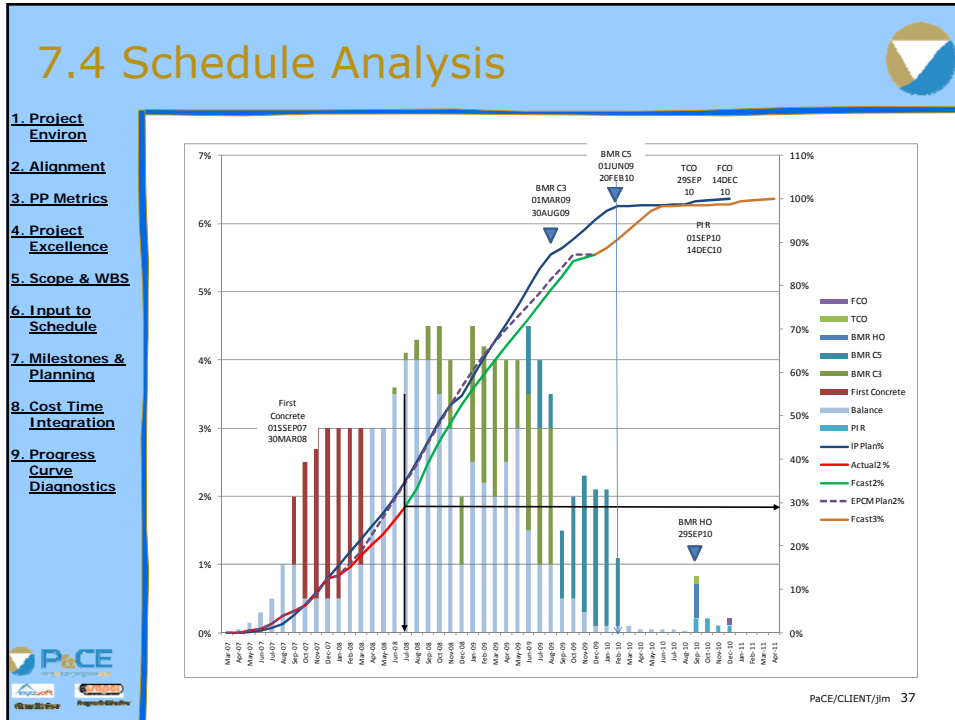
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Progress	#	Overall Milestone	Milestone Detail	fraction	START	END
21.5%	1	Placement of first concrete	S1	21.5%	01-Sep-07	Mar-08
87.2%	2	Installation Complete	C3	87.2%	01-Mar-09	30-Aug-09
98.3%	3	Hot Commissioning	C5	98.3%	01-Jun-09	20-Feb-10
99.5%	4	Hand Over	HO	99.5%		29-Sep-10
99.5%	5	Technical Close out	TCO	99.5%		29-Sep-10
100.0%	6	Financial Close out	FCO	100.0%		14-Dec-10
100.0%	7	PI Report	PIR	100.0%	01-Sep-10	14-Dec-10

1. Cardinal
2. Major
3. Project
4. Contract
5. Task

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8.1 Requirements

- 1. Project Environ
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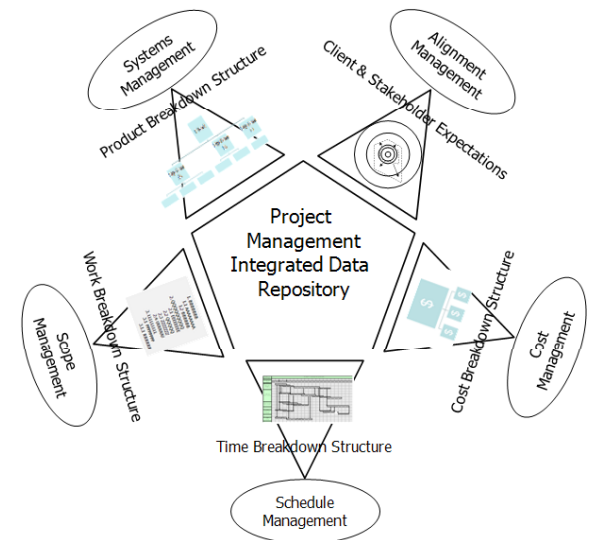
1. Equivalent work definition at deepest data level for common WBS
2. Objective management of cost and time data in dedicated process-centric systems
3. Objective data mapping at data control level
4. Data-Tag linkage of associated cost & time elements
5. Cost & Time data structures under change control



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8.2 Data Alignment

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The diagram illustrates the 'Project Management Integrated Data Repository' at its core. It is connected to several key areas:

- Systems Management** (top left) linked via **Product Breakdown Structure**.
- Client & Stakeholder Expectations** (top right) linked via **Alignment Management**.
- Alignment Management** (top right) linked via **Cost Breakdown Structure** to **Cost Management**.
- Cost Management** (bottom right) linked via **Time Breakdown Structure** to **Schedule Management**.
- Schedule Management** (bottom center) linked via **Work Breakdown Structure** to **Scope Management**.
- Scope Management** (bottom left) linked via **Product Breakdown Structure** back to **Systems Management**.



8.3 Benefits

1. Project Environ
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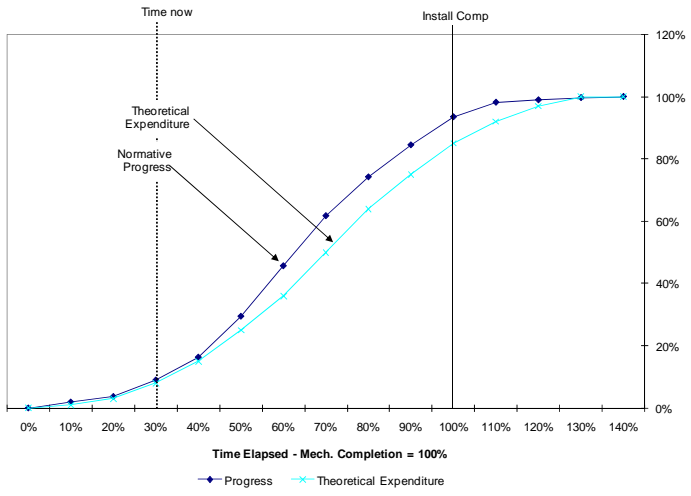
Key Benefits;

- Consistent work definition, applied systematically across entire scope, improves project performance through;
 - a) Stable and consistent scoping process within and across all projects
 - b) Simple and straightforward interface with supply chain (if extended to system architecture, this interface could become automated) makes contract interfaces more effective
 - c) Objective project trending, through use of learning & norms from other projects
 - d) Improved quality of project reporting, that better supports project management decision making
 - e) Resources can be redeployed without compromising project delivery effectiveness as a result of individual project process difference, leads to capability improvements that support sustained productivity
- Less project level risk exposure for the company, means;
 - The net result of using improved WBS methods enables the same scope to be delivered for less money (and less contingency) in less time and with fewer surprises (slip & claims management)

9.0 Progress Curves

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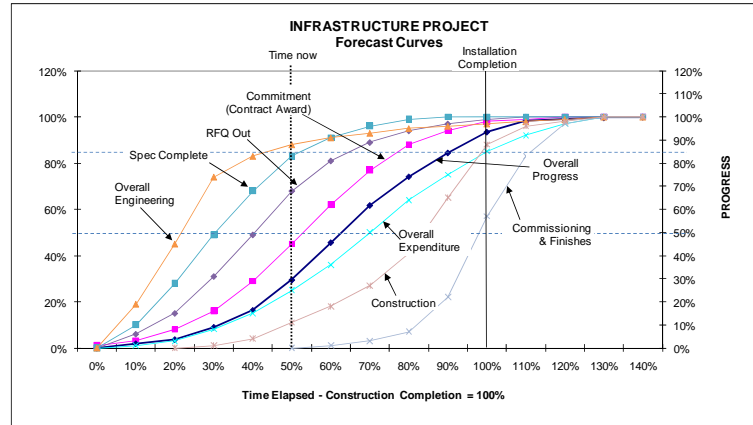
Time Elapsed - Mech. Completion = 100%

◆ Progress ✕ Theoretical Expenditure

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9.1 More Progress Curves

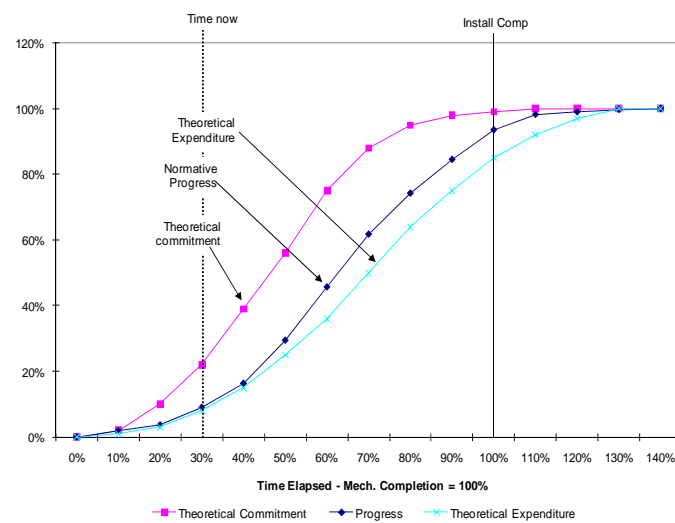
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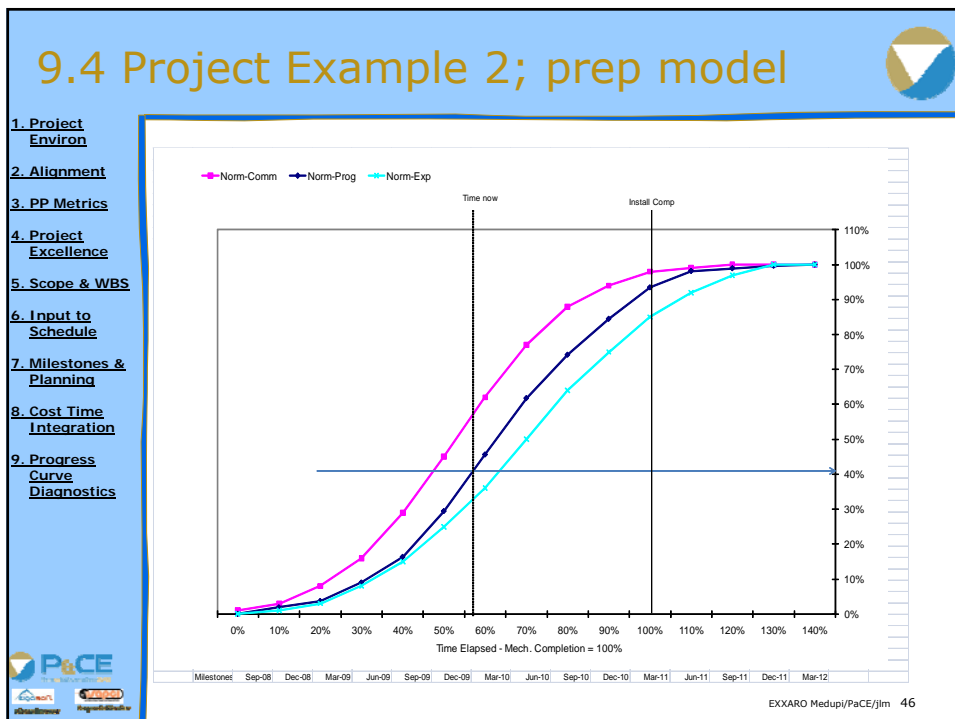
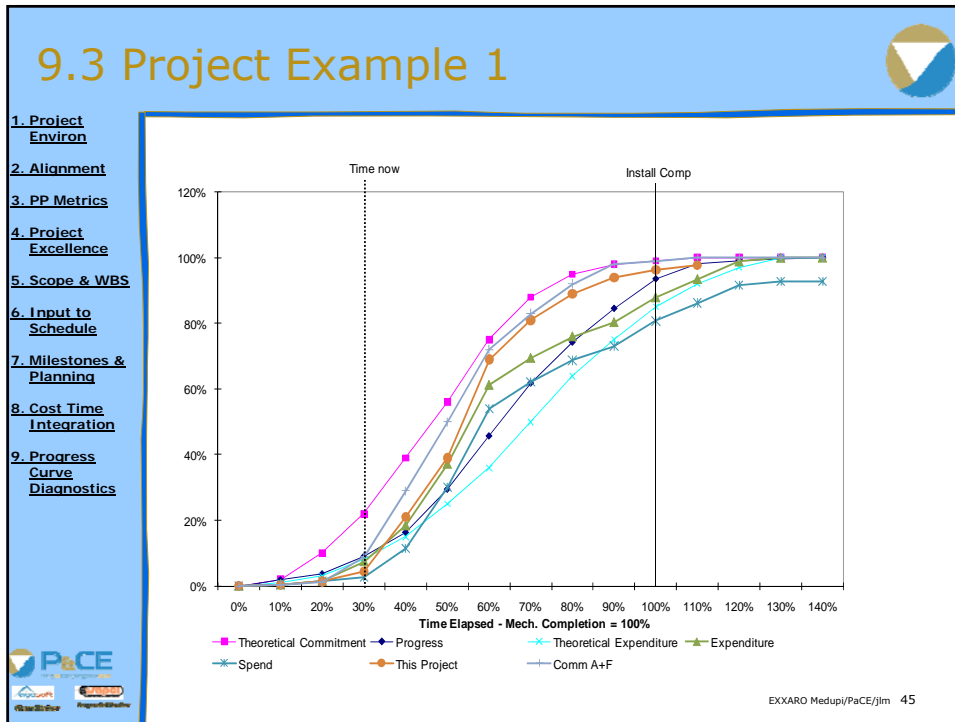
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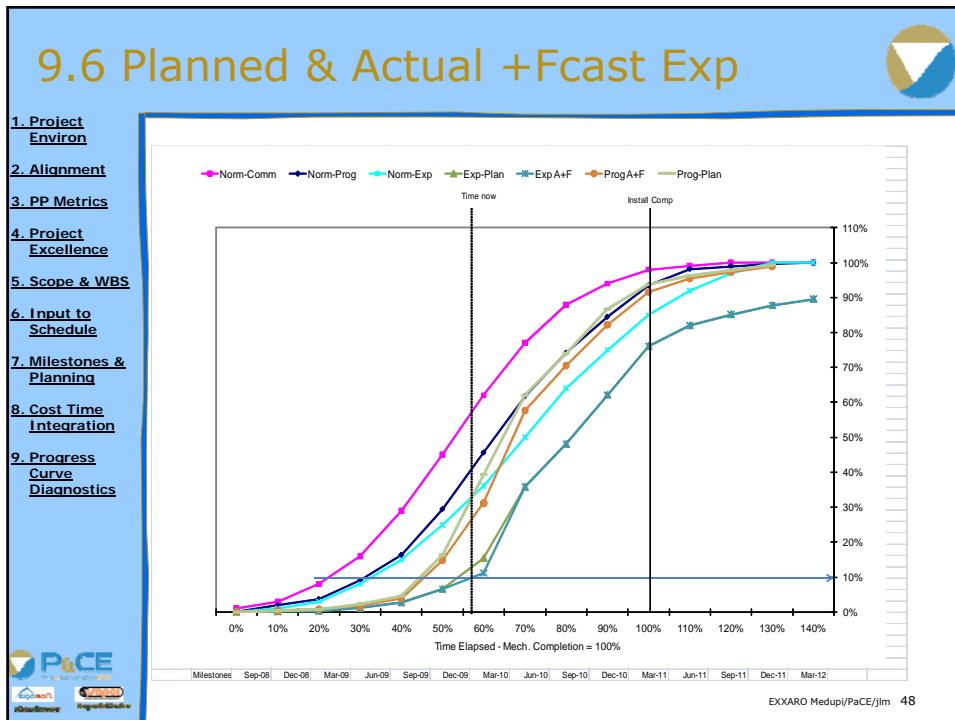
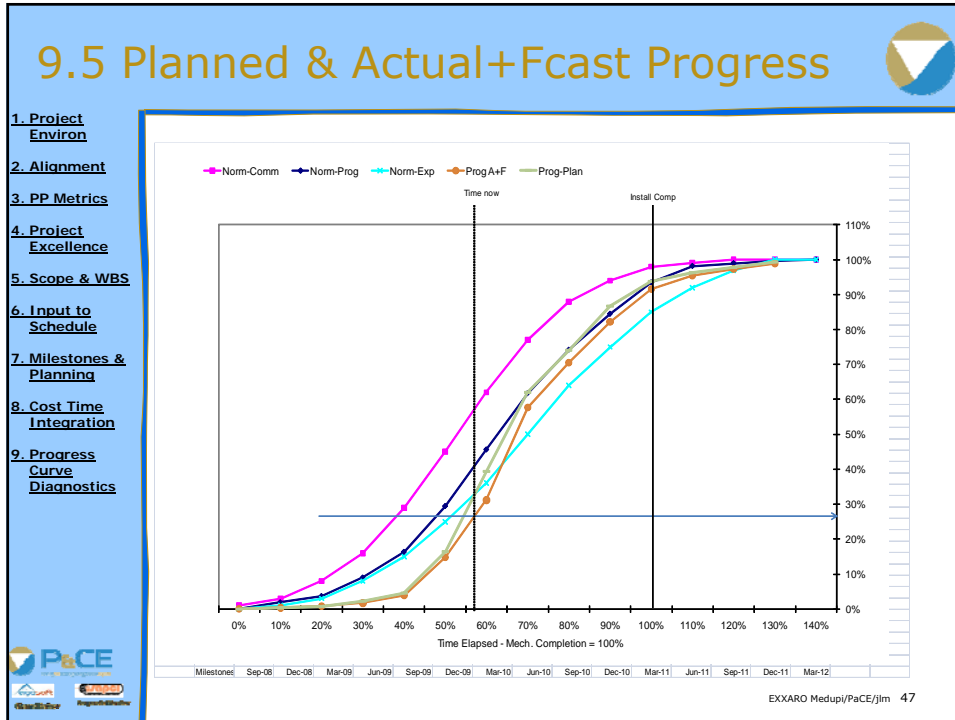
9.2 Predicting the Future

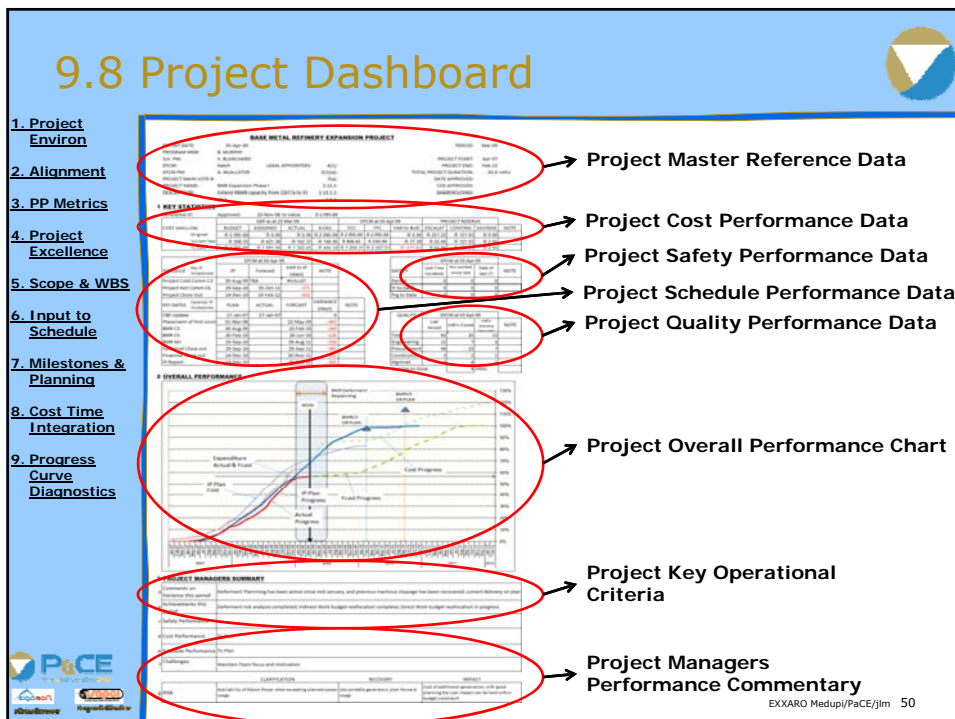
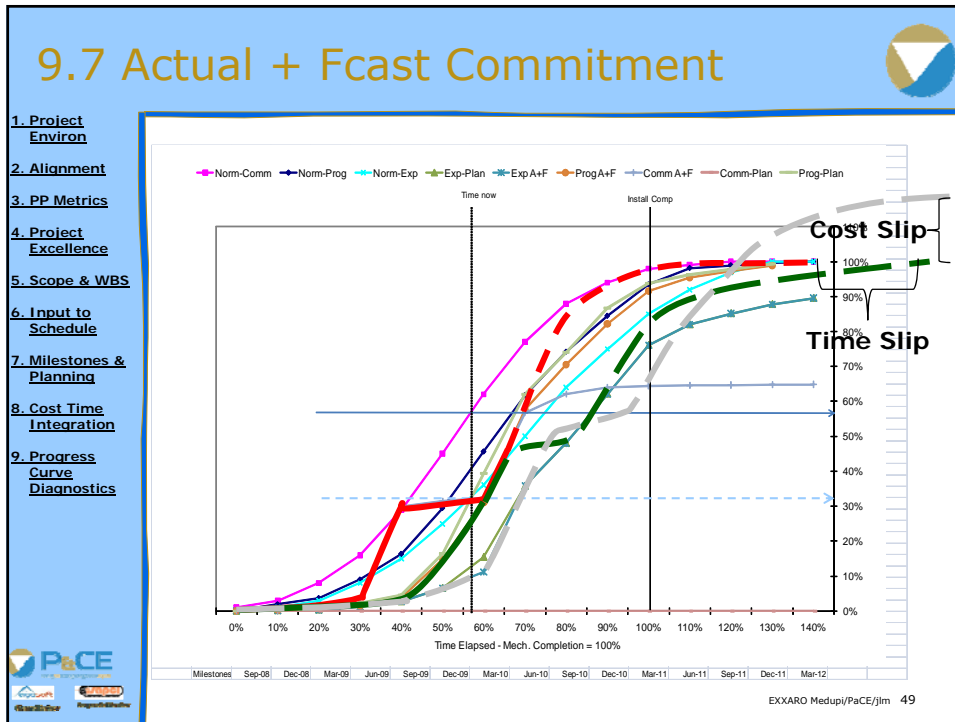
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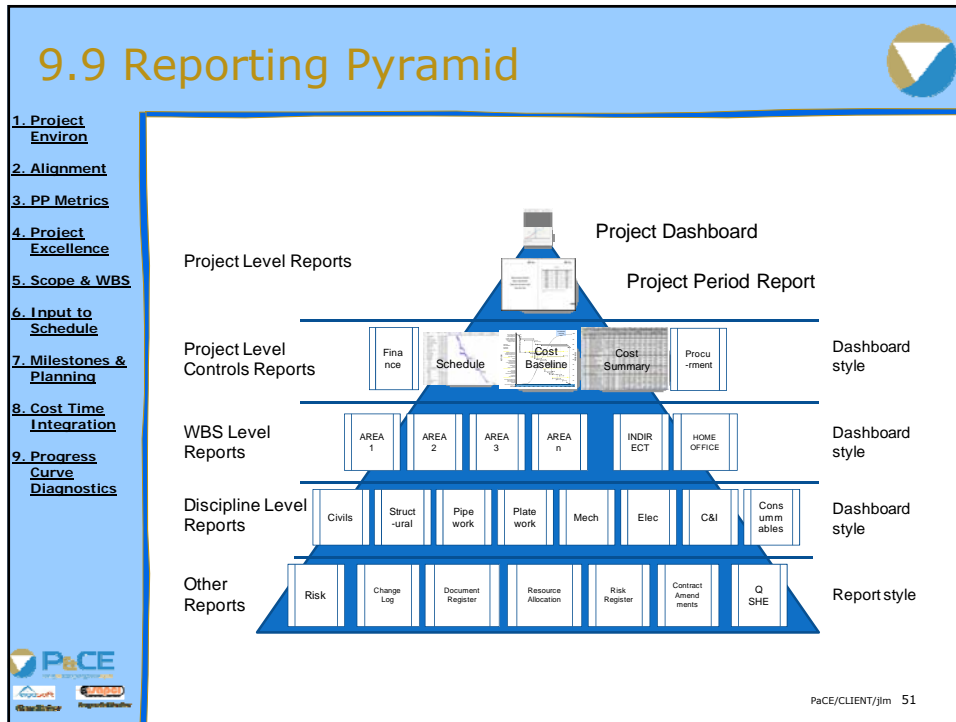


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Thanks for Your Attention
John Maddalena
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E-mail: john.maddalena@paceservices.co.za
Skype: John_maddalena

ANY QUESTIONS?

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