



ATTITUDE

WHATEVER THE MIND OF MAN CAN CONCEIVE
AND BELIEVE IT CAN ACHIEVE.

NAPOLEON HILL



First TSP Results at Ecuador and Colombia, a shared successful effort

- TSP Adoption in LA: Roll blocks and Lessons Learned
- Overall improvement experience by a TSP project: Bupartech case
- Metrics and performance of the PSP trained engineers
- Successful partnership into TSP community





Brief History (1)

- Late 90`s first awareness about TSP:
 - Attend Watts Humphrey presentation in Santiago Chile
- 2004 first presentation about PSP in Procesix Workshop in Santiago Chile
- 2004 and 2005 Procesix invest effort to introduce TSP
- March 2007 we were introduced to Jim Over and we committed to restart our effort in TSP
- October 2008, the pioneer Colombia TSP started, organized by Procesix
 - Bogotá, Cali and Medellin
 - 50 executives, 40 companies, 10 universities, 4 governmental organisms
 - 100 attendees to the 2008 Procesix Workshop in Medellin, Colombia



Brief History (2)

- November 2008, first TSP Executive Seminar in Colombia
 - 30 attendees
- November 2008, a National program for TSP was presented to SENA
- December 2008, first PSP orientation training for Digital Future
 - 27 attendees, all of them University professors
- April 2009, SENA and Digital Future organized a TSP Kickoff event
 - 250 engineers, managers, project leaders, university reps
 - Agreement signed by SEI, SENA, Digital Future and Procesix
 - TV and press broadcast of the purpose of TSP and its effect in Colombia
 - June 2009, signed agreement between SEI, ParqueSoft and Procesix



Brief History (3)

- 2010, first PSP Fundamentals open course, 17 Attendees
- 2010, Procesix Colombia sign a contract with SENA to start the National PSP Academy.
- 2010, 15 engineers from Ecuador were trained and pilot project coached
- August 2011, a project with the sponsorship of SENA started
 - 50 engineers trained in PSP Fundamentals
 - 24 project managers and executives in TSP
- September 2011, 10 SENA instructors completed PSP Advanced training
- Summary
 - 92 PSP Fundamentals, 25 PSP Advanced, 58 TSP Executive Seminar
 - 130 PSP/TSP orientation training
 - >1500 exposed to any presentation of TSP



Roll Blocks

Have been difficult to introduce TSP to the LA countries

- Cost (Training, Fees, Licensing)
- Not easy to believe TSP results showed (“seems to be too good to be true”)
- No organizational “certification” (nobody ask for it)
- Cultural barriers (discipline, change of mind set)
 - Top Management desire for project control (sometimes they do not believe on self direct teams concept)
 - Task hours versus low productivity
 - TSP versus Agile methods
 - “We have already CMMI. Should we invest in TSP?”
 - “Too much training, no availability to attend”



Lesson Learned

Keys to succeed

- Offer orientation and massive presentations by an international recognized individual
- Offer orientation training to managers and leaders
- Support from National Initiatives
 - Prosoft, Mexico or SENA, Colombia
- Complete introduction of TSP
 - Must be the whole path, training and coaching



Lesson Learned

Issues to be aware of

- Ethical behavior ?
 - Depreciation of SEI TSP courses (free courses or working under costs)
 - Try to block or knock down other partners initiatives using any kind of means
 - Monopolize versus Strategic Alliances
 - TSP trained resources “piracy”
- Awareness time sometimes take one year or more
 - Government grants reduces awareness introduction up to 60%



Bupartech Case: TSP on MAIA Project

- Business and Product Goals:
 - Develop a BPM Multiplatform Financial Solution
 - Solution must be done using jBPM, an open source technology involving extensive use of Java, Hibernate, Spring , Oracle and PostgreSQL
- Team (EVANs) Characteristics:
 - 6 Members plus team leader
 - 2 senior developers plus 4 junior developers
 - NO experience from juniors on the technology



Bupartech Case: Meeting 1 and 2

- Management Goals:
 - Deliver on 12 weeks (this was on Christmas 2010!)
 - Emphasis on open source solution and SaaS Architecture
 - Critical emphasis on process fidelity and discipline.
- Important Facts:
 - Management was very supportive
 - Team was comprehensive
 - Delivery date seems difficult, but the team was committed to bring on success to the TSP pilot.
 - Designed Manager and Implementation Manager assigned to the two senior developers
 - Process, Planning and Customer Interface Manager, more discipline personnel



Bupartech Case: The Project Strategy

- Conceptual Design worked pretty good
- When looking on the Development Strategy and the Products Process
 - Based on ONE previous experience (from senior developers)
 - Inspections were added to decrease Failure Costs
 - Design Manager, guides on the development strategy.
 - Design was easy! Since they already had HLDs so they considered an extended version of the use-cases (including Pseudocode and an Interface-Data Base Relationship Matrix)
- Difficulties on Gross Estimates:
 - First estimate came to be 2 times bigger
 - Difficulties on visualized reuse components



Bupartech Case: Developing the PLAN

- MAIA Estimated Size (LOC)
 - 28 KLOC Added
 - 10KLOC Reused
- Estimated Productivity: 26 LOC/Hr.
 - From Detail Design to Integration Test on BPM Environment
- Estimated Effort
 - 1081.7 Task Hours
 - 12 task hours /week per team member
- Management Schedule vs. Team Schedule
 - 12 Weeks vs 14 Weeks
- Quality: Reaching 60% Inspection Yields



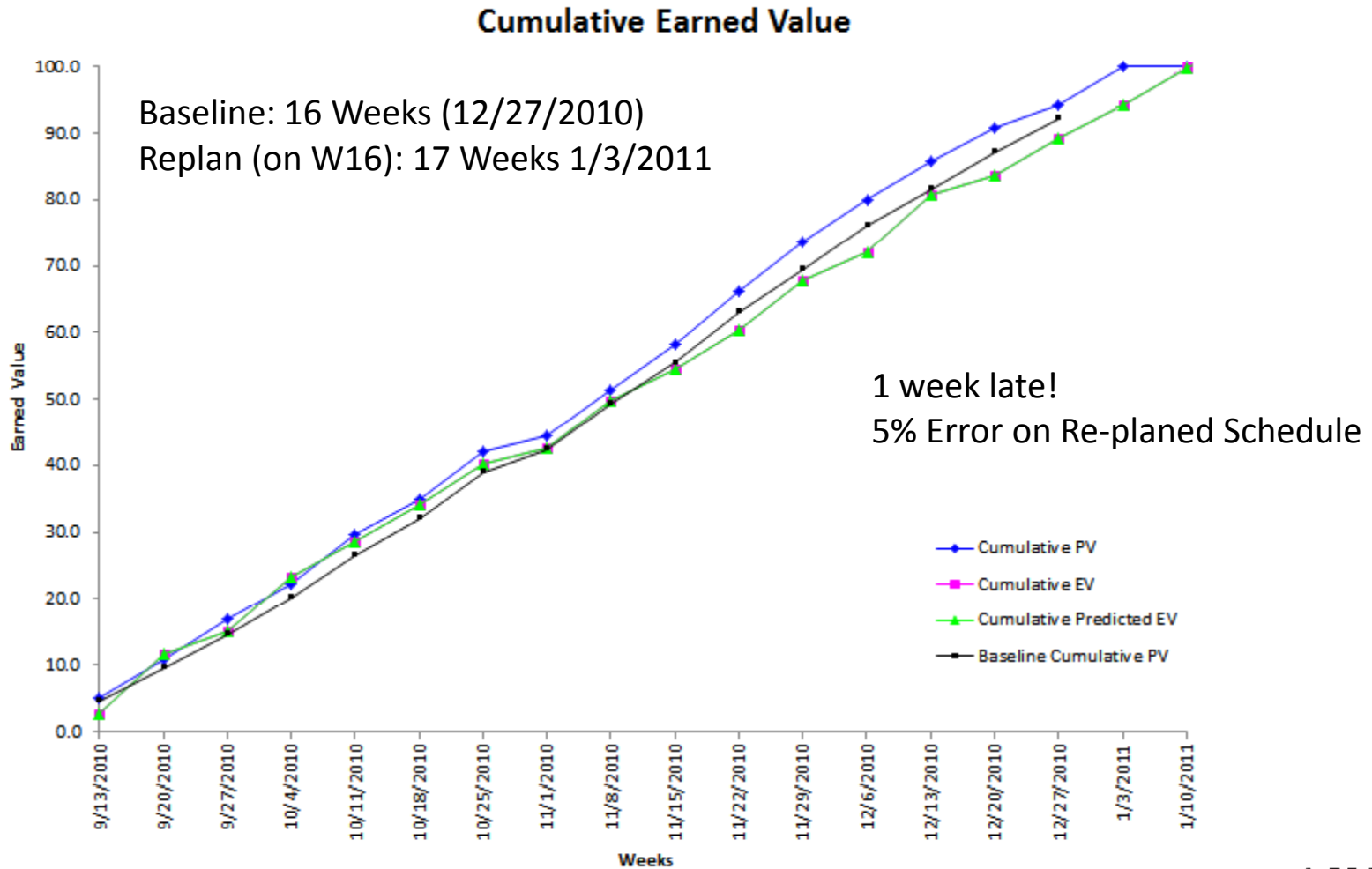
Bupartech Case: On the ROAD

- Week #1
 - Some Scripts and Role Responsibilities were to be handled
 - First Week involved a half week jBPM training
- Week #3
 - Some components reached CODE and the Design Strategy appears to be inadequate for Junior Developers
 - Design Manager (senior dev.) is re-assigned 50% availability, since he is on other critical project.
- Week #7
 - Design Manager, quits the team and company!
 - Team was worried but committed!



Schedule: Earn Value

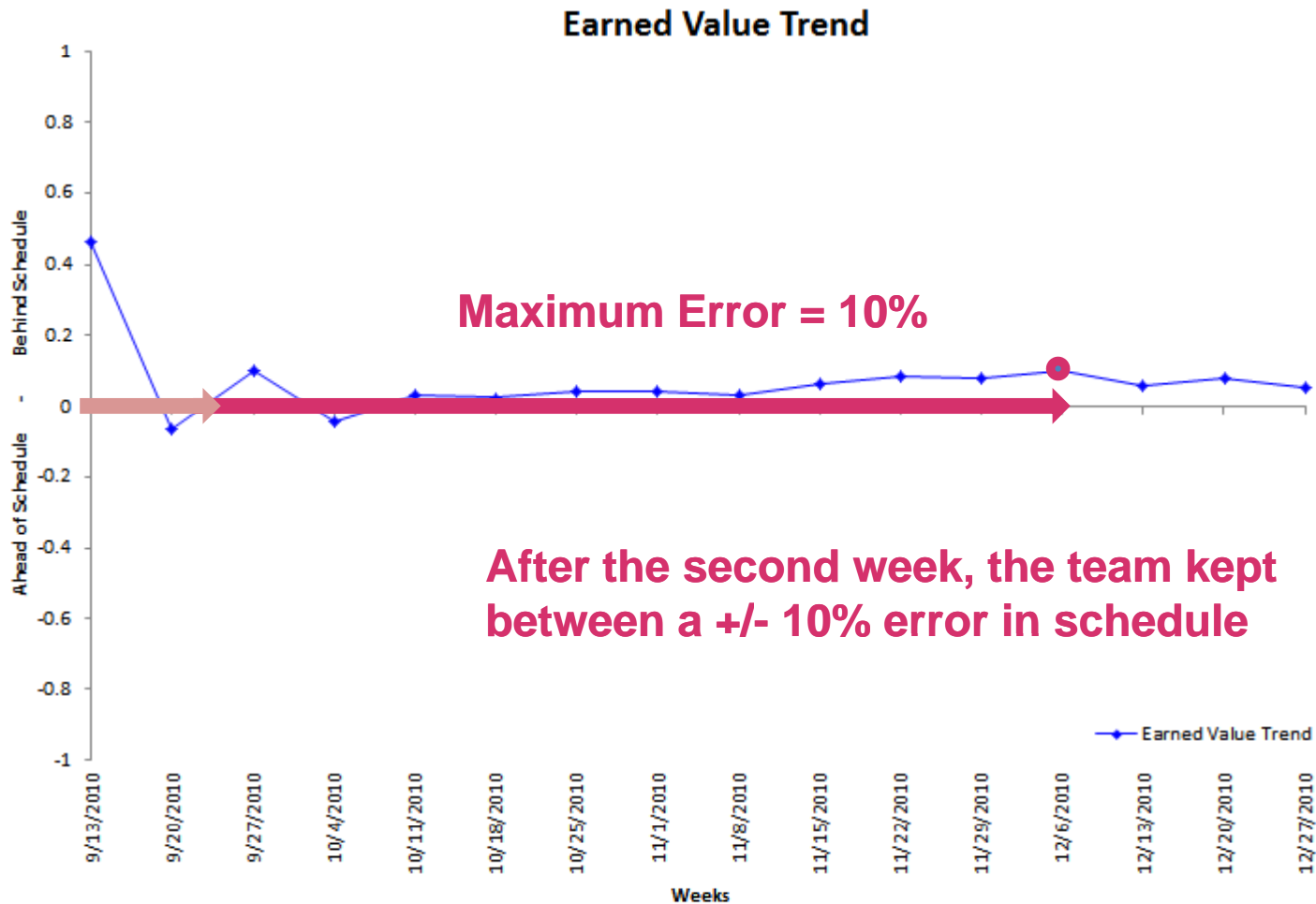
www.procesix.com





Earned Value: Max Dev. Error of 10%

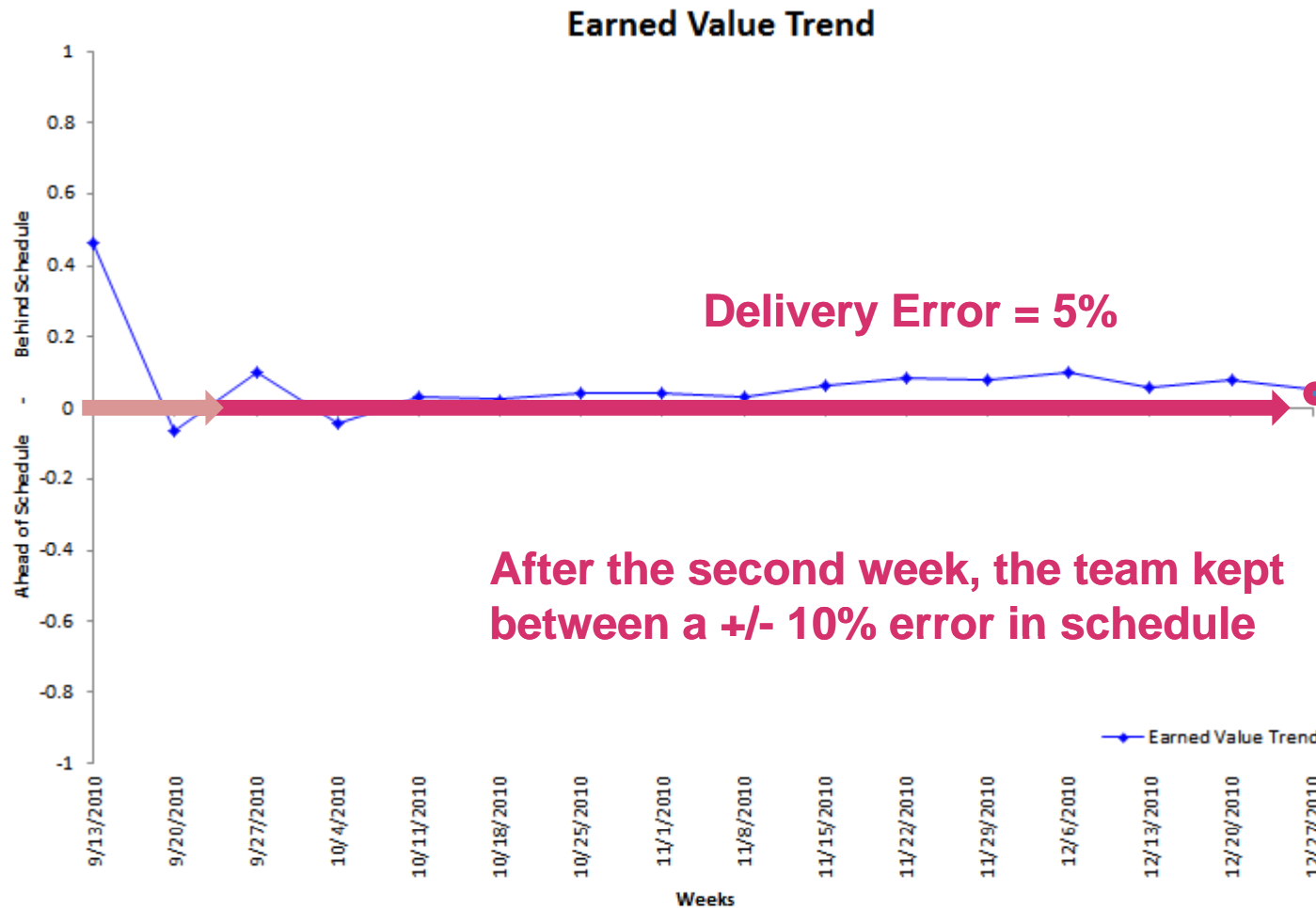
www.procesix.com





Delivery was 5% behind schedule!

www.procesix.com

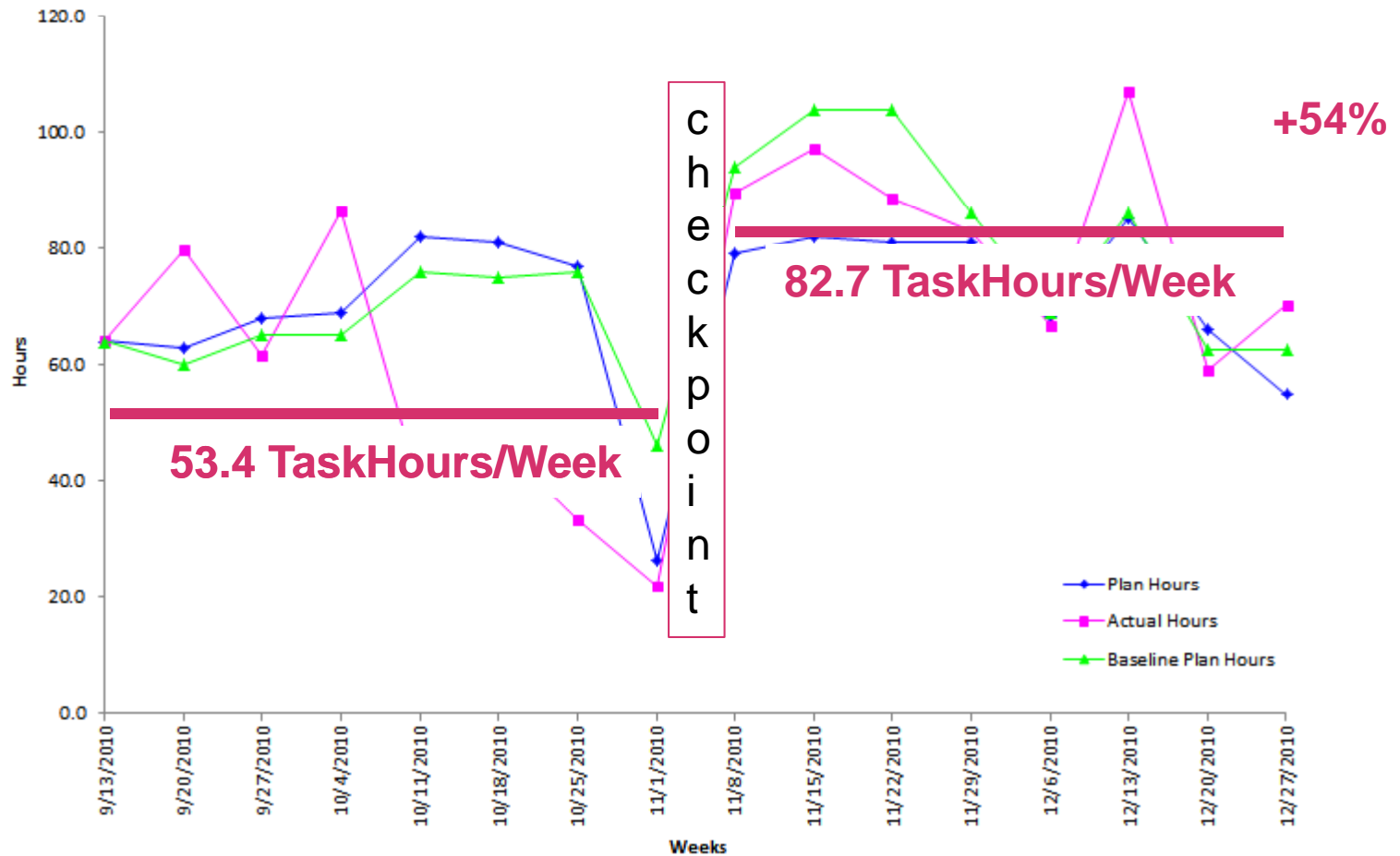




Task Hours: Productivity Increased 54%

www.procesix.com

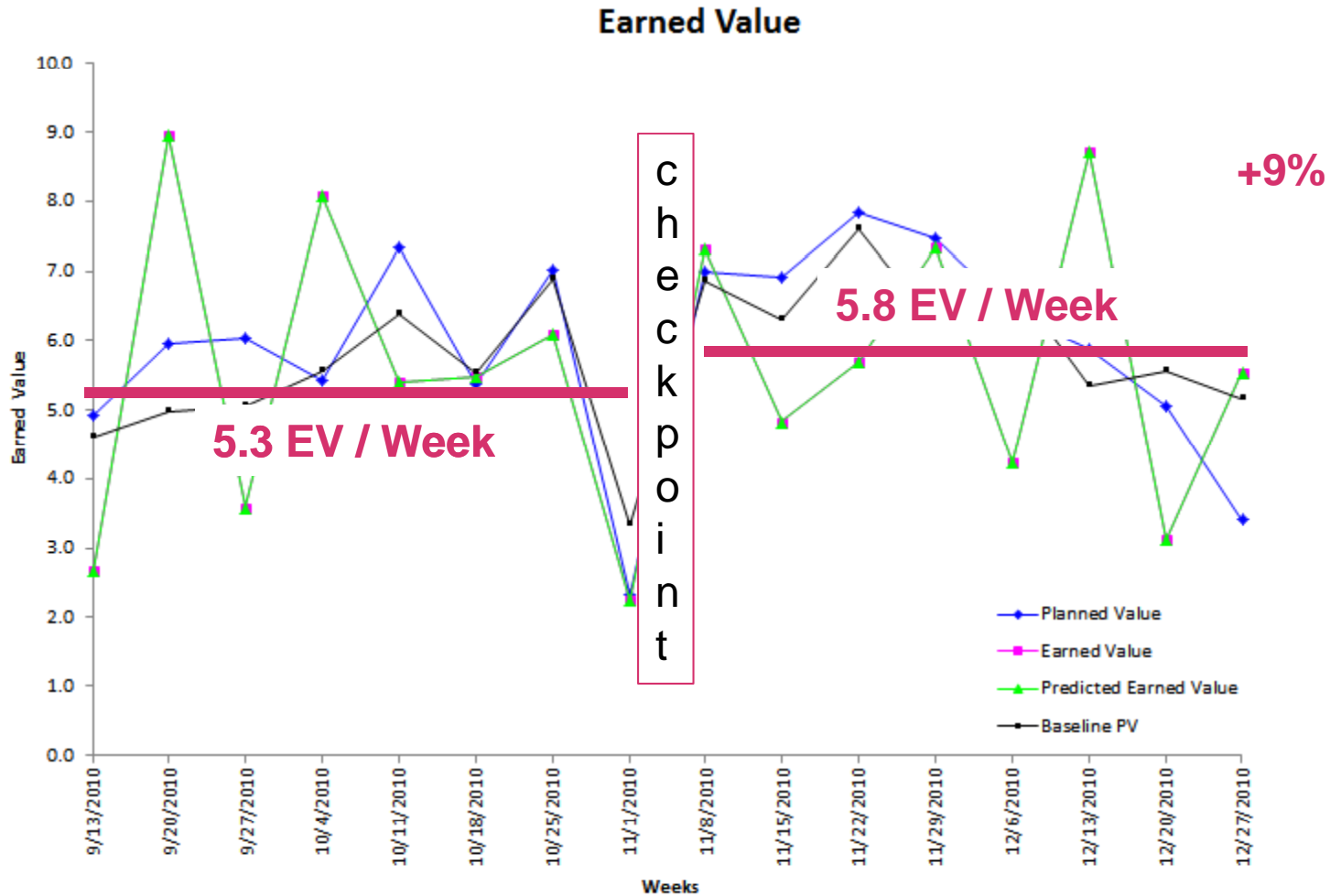
Planned and Actual Hours per Week





Earn Value: Increased Performance

www.procesix.com

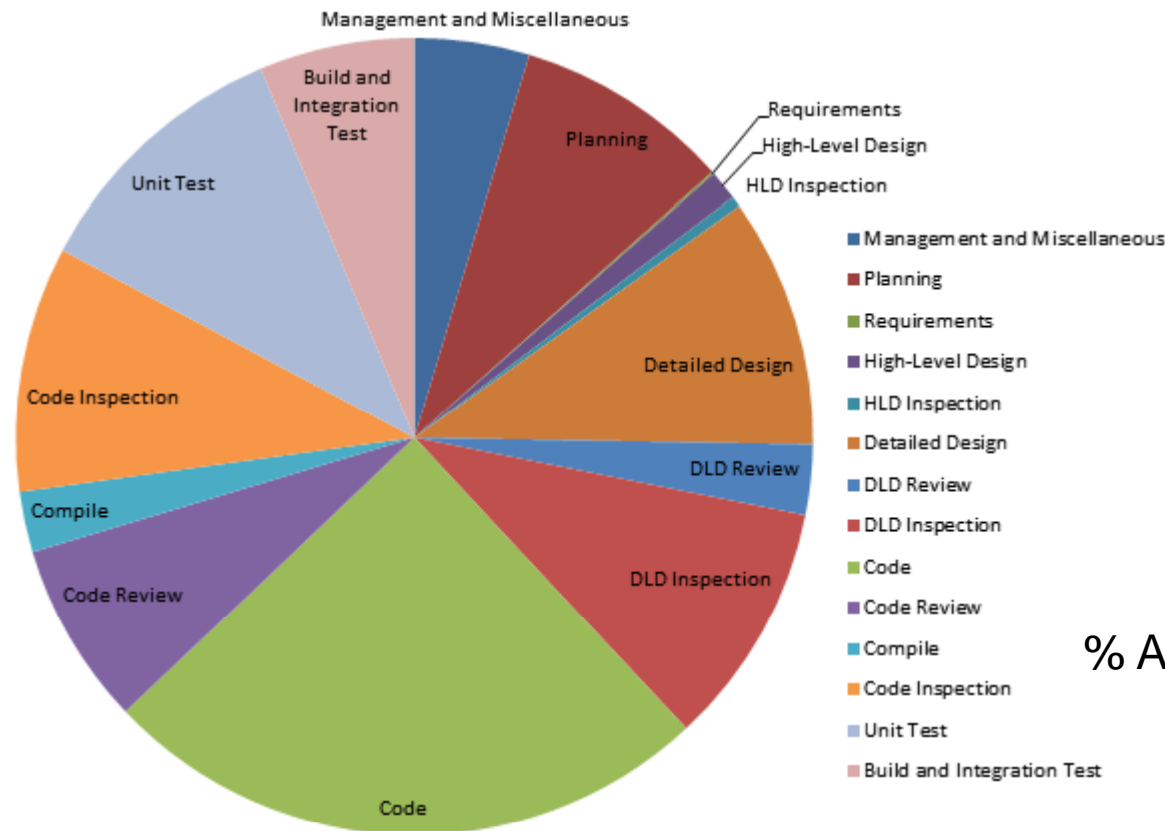




Time Distribution and Cost of Quality

www.procesix.com

Actual Time in Phase Percent for Assembly SYSTEM



% Planning: **8%**
 % Design: **10%**
 % Code: **25%**
 % Failure COQ: **19%**
 % Appraisal COQ: **31.8%**

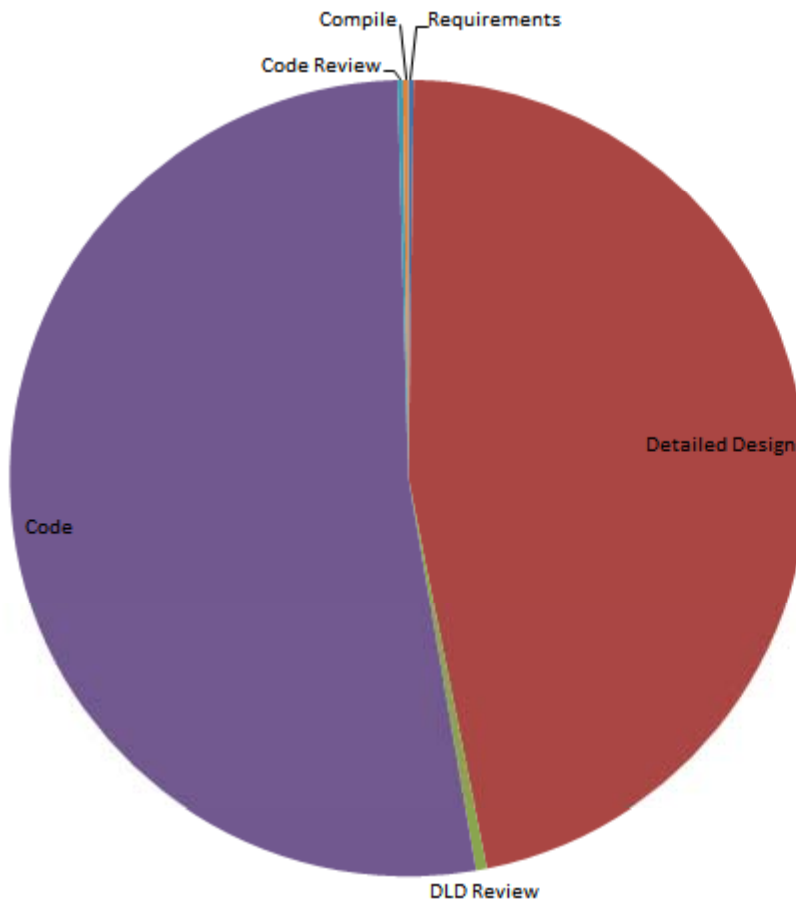
A/F ratio: 2.26



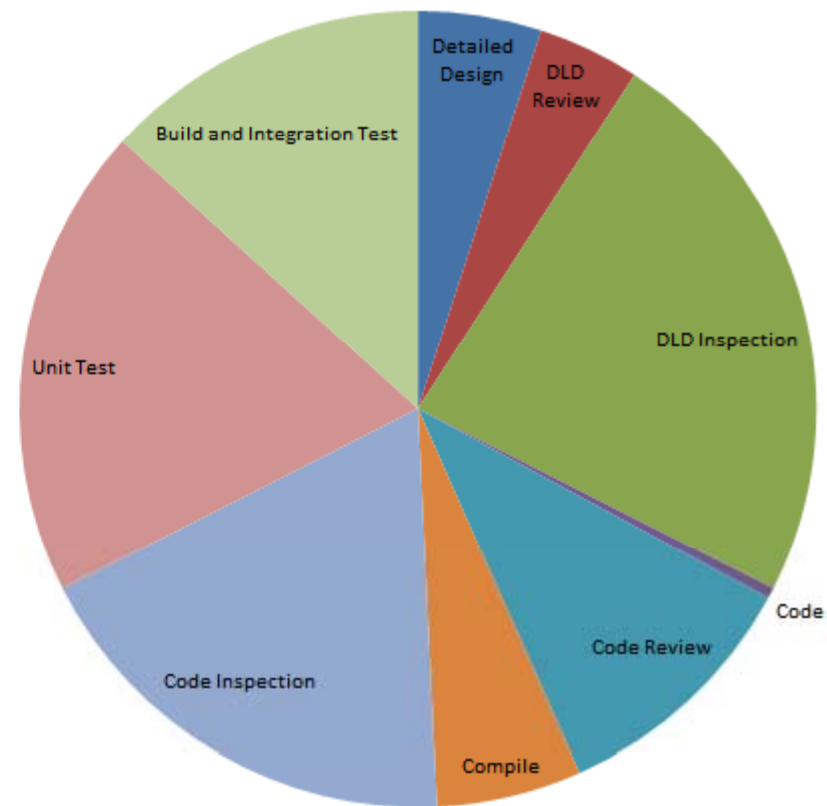
Defects Distribution

www.procesix.com

Actual Defects Injected in Phase Percent for Assembly SYSTEM



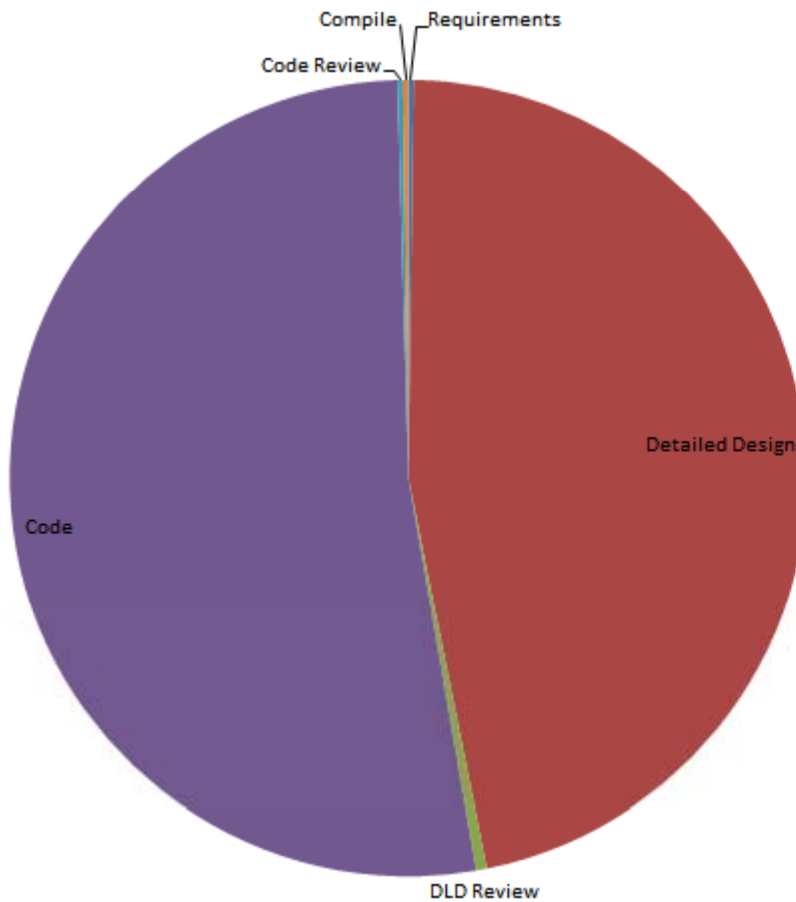
Actual Defects Removed in Phase Percent for Assembly SYSTEM



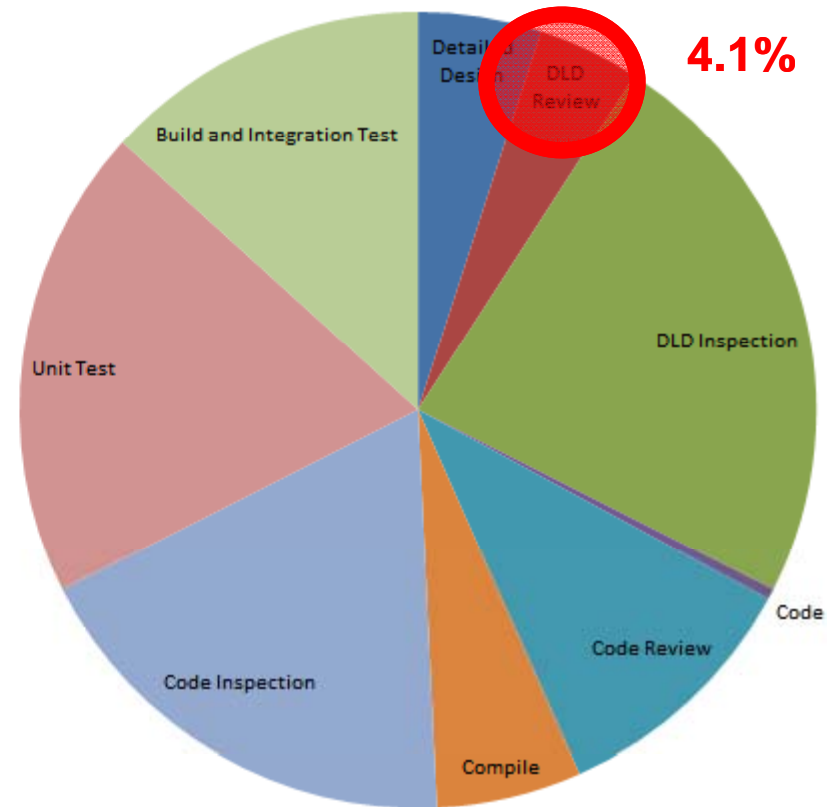
Defects Distribution

www.procesix.com

Actual Defects Injected in Phase Percent for Assembly SYSTEM



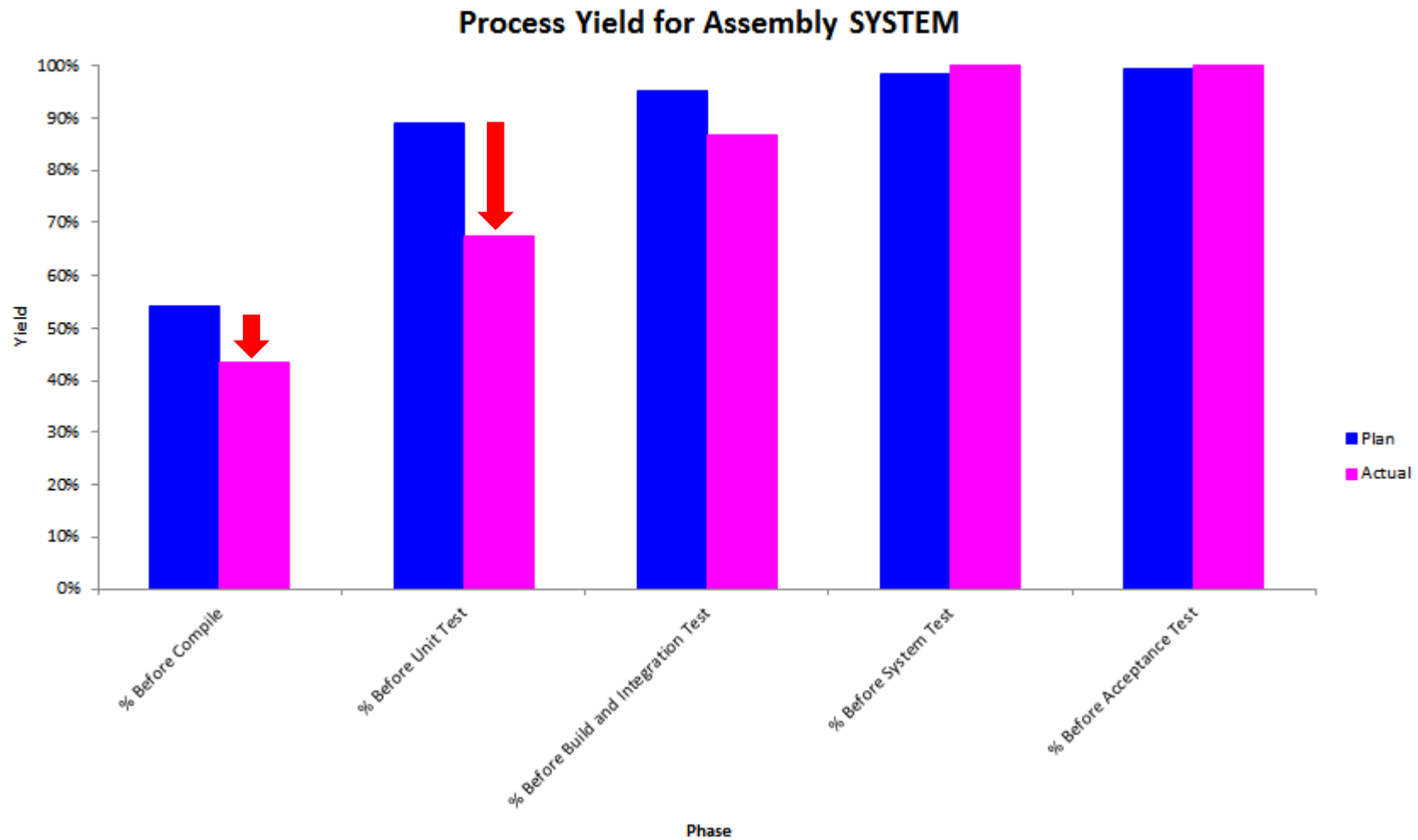
Actual Defects Removed in Phase Percent for Assembly SYSTEM





Lesson Learned: Focus on Reviews!

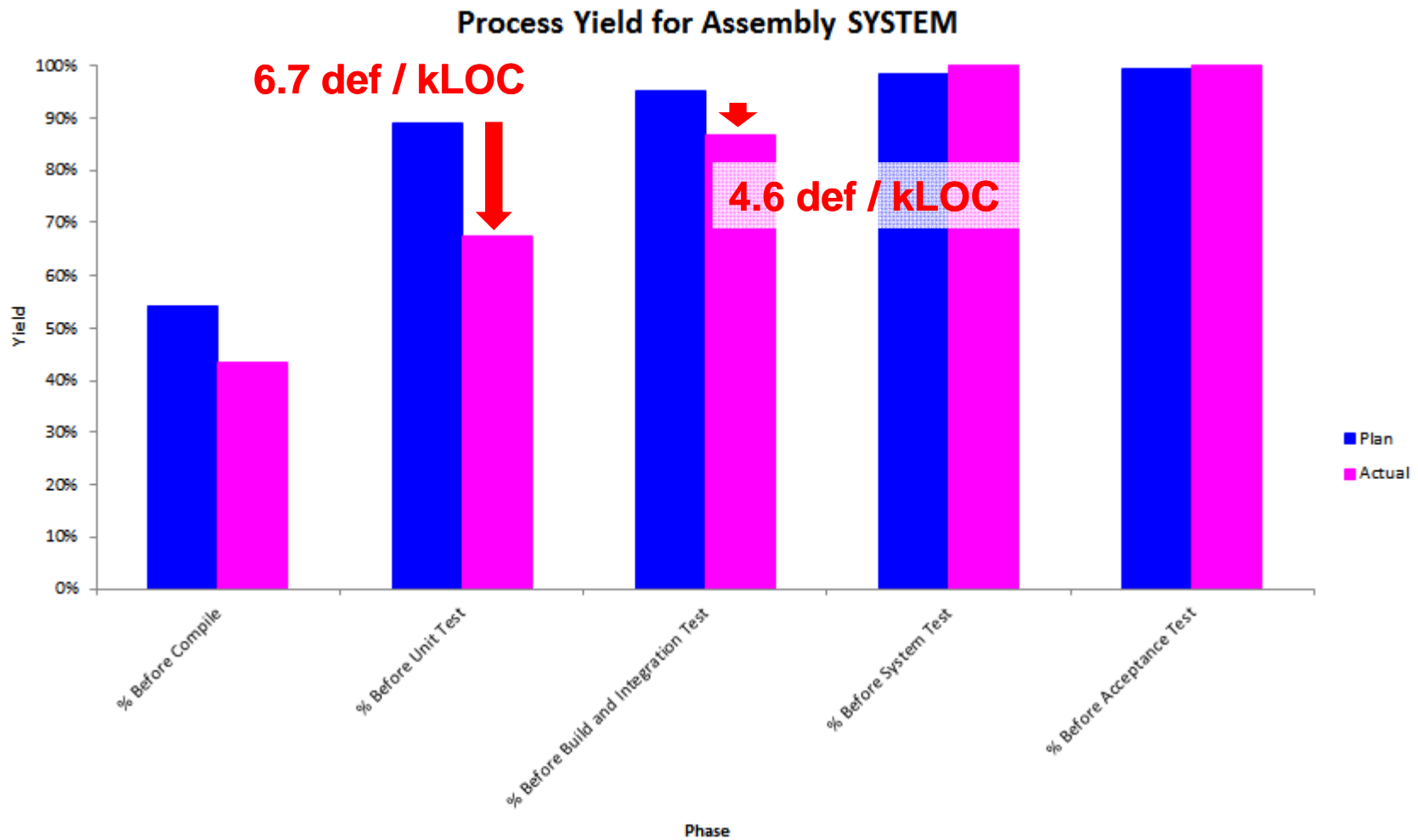
www.procesix.com





Lesson Learned: Focus on Reviews!

www.procesix.com





Quality need some improvement!

- Reviews were done at an appropriate rate, but still many defects filtered on to Unit Test
 - Few defects found on DLDR (detail level design review)
 - Checklist needed improvement
- Low Yields (Reviews and Inspections)
 - DLDINSP: 61% Yield and DRL 1.33 (vs. UT)
 - CODEINSP: 33% Yield and DRL 1.04 (vs. UT)



Bupartech Case: TSP Post-mortem Lessons

- Improve Size Estimate
 - Consolidate historic data and define appropriate relative size tables
 - Granularity
- Focus on Reviews
 - Update personal review checklist to increase Yields
- Focus on Design
 - Adjust and Improve the design strategy
 - Implement Verification Techniques



Outstanding Point from this TSP Team

- High: Coordination, Commitment and Attitude
- Support, Motivation and Leadership
 - Team included “standup meetings”, good communication
 - Discipline in following scripts and role ownership
- Jelled team
 - Zero conflicts between team members, even though one senior developer left the team
 - Self directed team, worked out on solving problems



Performance Summary

n=54

Mexican Engineers are convinced that **PSP is key** to be prepared to **success** in a global competitive environment.

www.procesix.com



	First Program	Last Program	Last/First
Average LOC	98.9	116.4	1.18
Time Accuracy	-22.7%	3.2%	-0.14
Productivity (LOC/Hr)	39.1	36.1	0.92
% of design time	11.2%	21.1%	1.88
% Failure COQ (% Time in Compile and UT)	26.3%	10.5%	0.40
% of compile time	10.10%	1.80%	0.18
% of test time	16.20%	8.73%	0.54
Defect Density per KLOC	91.5	49.9	0.55
Defect Density at UT	23.8	9.3	0.39
Defect Density at COMP	53.2	6.1	0.11
% of defects removed before Copile	8.6%	80.0%	9.30
% of people with less than 5 total defects/KLOC	1.8%	16.6%	9.22



Performance Summary

n=15

Ecuadorian Engineers are convinced that **PSP is key** to be prepared to **success** in a global competitive environment.

www.procesix.com



	First Program	Last Program	Last/First
Average LOC	159.5	112.5	0.71
Time Accuracy	5.23%	-1.22%	-0.23
Productivity (LOC/Hr)	73	24	0.33
% of design time	7.10%	21.70%	3.06
% Failure COQ (% Time in Compile and UT)	31.00%	14.50%	0.47
% of compile time	6.00%	0.70%	0.12
% of test time	25.00%	13.80%	0.55
Defect Density per KLOC	93.5	40	0.43
Defect Density at UT	19.8	10.3	0.52
Defect Density at COMP	42.15	9.8	0.23
% of defects removed before Copile	1.30%	77.20%	59.38
% of people with less than 5 total defects/KLOC	0.00%	50.00%	*inf



Performance Summary

n=10

Colombian Engineers are convinced that **PSP is key** to be prepared to **success** in a global competitive environment.

www.procesix.com



	First Program	Last Program	Last/First
Average LOC	120.9	150.1	1.24
Time Accuracy	-9.2%	-1.4%	0.15
Productivity (LOC/Hr)	37.5	35.0	0.93
% of design time	18.6%	24.4%	1.31
% Failure COQ (% Time in Compile and UT)	27.8%	9.8%	0.35
% of compile time	9.8%	2.3%	0.23
% of test time	18.0%	7.5%	0.41
Defect Density per KLOC	75.0	26.9	0.35
Defect Density at UT	26.4	6.5	0.25
Defect Density at COMP	43.6	3.4	0.08
% of defects removed before Copile	5.1%	80.0%	15.7
% of people with less than 5 total defects/KLOC	0%	20%	*inf



Successful Partnership

www.procesix.com

- Kernel Technologies and Procesix have been working together since 2010
 - Relationship based on professional excellence, honesty, ethic and commitment
 - Knowledge transfer
 - Shared objectives and goals
 - Complementary competencies





Thank you

www.procesix.com

- Héctor González Santos
 - Hsantos@kerneltechnologies.com
 - Hector.gonzalez@procesix.com
- Pablo Henríquez V.
 - Pablo.henriquez@procesix.com

