

ESD.34J System & Project Management

Managing Vehicle Programs: A Survey of Tools and Methods

Team # 3
Matt Bagley
Sashi Somavarapu
Lara Zarewych

December 4, 2003

Slide 1



Courtesy of Matthew Bagley, Sashi Somavarapu, and Lara Zarewych. Used with permission.

Presentation Overview

- Project Description/Method
- Tools and Methods Identified
- Assessment of Tools and Methods
- Status of PM Tools Discussed in Class
 - CPM, DSM, Critical Chain, System Dynamics
- Conclusions and what we think of it all...

Slide 2



Project Description/Method

- Survey and understand all PM Tools and Methods (T&M) currently used in vehicle programs
- Compare two major vehicle programs (SUV vs. Car)
- Assess value of each T&M through a survey and interviews of Ford PM personnel
- Relate T&M's identified to the framework presented in class
- Motivated by personal experiences in being part of program team
- Identify areas for improvement

Slide 3



Tools and Methods Identified

(TLA's and Ford speak)

Tools		Methods	
Program Portal	AVBOM	PST	AST
Integrator [®]	GPLUS	PMT	PAT
E-Tracker [®]	e-Rooms ^{**}	PIR	Change Control
CPV2	MS Project/Excel ^{®**}	Milestone Reviews	MCR
eFDVS	ColorTrax	Design Reviews	Color Harmony Reviews*
WERS	CRID	24 Tools and Methods Identified	
AIMS	EFT		

*Used by Big Three
 ** widespread corporate use

Slide 4



NOTES FOR SLIDE 4

24 Tools and Methods identified

Project Management Tools and Methods Used at Ford Motor Company

The following section provides a brief description of all Program Management tools and methods surveyed in this project.

TOOLS

Program Portal Website

Description: The SUV and Car program each have a dedicated program portal website. The purpose of this website is to provide members of each project team a single point access to tools and information needed during the project. The portal provides information such as project timing (milestone and major event dates), upcoming deliverables, organization chart, team meetings and key events.

Established: The program portal was piloted in 2001 and now all major programs have a portal. The development of Program Portals was primarily driven by a few program level managers, which then spread to other programs.

User Profile: The portal was designed to become the homepage for everyone on the project team and to be broadly used

Training requirements: Requires no formal training.

Frequency of Tool Use: high/heavy use; weekly/daily/monthly dependant on user

FPDS Integrator

Description: The FPDS (Ford Product Development System) Integrator is the primary tool used to plan and monitor the tasks of each project. The Integrator is a web based single-point-of-entry reporting tool for monthly assessments of program compliance to approved milestone dates. The Integrator compares actual and planned milestone approval dates to approved program timing. The Integrator supports metrics driven reviews of program deliverables at each milestone (gateway). Not all project deliverables (tasks) are reviewed in detail at milestone reviews. PIR (Program Implementation Review) reporting focuses on a subset of all FPDS Integrator deliverables and is a review of the general health of the program. Each deliverable is assessed as Red, Yellow or Green. A Red assessment indicates that the deliverable is off track in terms of schedule, cost or performance and there is no plan to recover. A Yellow assessment means that the deliverable is off track as above but has a plan to recover. A Green assessment means everything is on track for all targets. Inviolable reporting is a subset of the PIR reporting deliverables. These deliverables must be assessed as Green in order to pass through a milestone or gateway.

Integrator is a single-point-of-entry reporting tool for:

- Program Milestone Reporting
 - o Monthly report to PMM (product matters meeting) assessing Program compliance to approved milestone dates
 - o Compares actual and planned Milestone Approval dates vs. PMM (<SI> Approved timing
- EQOS (engineering quality operating system) Reporting

NOTES FOR SLIDE 4 CONT.

- o Supports metric-driven reviews of engineering deliverables and disciplines at CFE (chief functional engineer) level
- o Content overlaps Program Deliverables/Metrics, but includes metrics showing greater detail for delivery of engineering content
- PIR Reporting
 - o Supports metric-driven reviews of Program Health
 - o Content is subset of FPDS QOS Deliverables and Metrics
 - o Review process varies among Clusters and Brands
- Inviolable Reporting
 - o Inviolable Deliverables are a subset of the PIR deliverables that must be Green at the respective milestone

Established: Evolved from PDQOS (product development quality operating system) established in 1996. The development and use of the Integrator is primarily corporate driven.

User Profile: The Integrator is intended to have a very broad user group throughout the program team. Owners and executors are assigned to each deliverable and are expected to update them on a regular cadence. A project management analyst is assigned to administer the Integrator for the project and is responsible for setting it up during the planning phases. When owners and executors of deliverables don't keep up their assessments of deliverables, the PM analyst becomes a TC&E (Tracker, Checker and Enforcer)... an ankle biter continually asking: "are you done yet?"

Training requirements: requires significant formal training

Frequency of Tool Use: low/sporadic use; weekly/daily/monthly dependant on user

E-Tracker

Description: E-Tracker is a web-based tool used to monitor issues as they arise throughout the project. E-Tracker can be used for any type of project or issue but is often used as a tool to monitor the completion of project tasks from the FPDS Integrator. E-Tracker is unique in that the PM analyst can attach an E-Tracker issue to a project task and the executor of the task will receive an automatic email notification of the assignment. E-Tracker has reporting capabilities in Excel and is considered to have advantages over creating an Excel spreadsheet to track issues due to its link to the Integrator and auto-email capabilities. E-Tracker can be integrated with the Integrator or used as a stand-alone application.

Established: 2001. The IT developers who saw a need for an integrated tracking application drove the development of e-Tracker. There are now nearly 6000 ad-hoc projects listed in E-Tracker.

User Profile: Program management analysts/ leaders of small projects and activities

Training requirements: very little training required

Frequency of Tool Use: medium use; weekly/daily/monthly dependant on user

Capacity Planning Volume (CPV2)

NOTES FOR SLIDE 4 CONT.

Description: CPV2 is a web-based program management tool with the purpose of planning and monitoring volumes of all supplier end-item components and assemblies in the vehicle program. Suppliers are given access to this tool and at a certain point during the project are instructed to input their capacities for each end-item they supply. Ford project management personnel use the information to insure all end-items will be able to support production based on forecasted volumes and mix rates.

Established: 1999

User Profile: Corporate wide use, FPDS deliverable driven. Project management analysts/ Marketing sales and services analysts, suppliers

Training requirements: brief formal training required

Frequency of Tool Use: low/sporadic use; weekly/daily/monthly dependant on user

eFDVS (Ford Design Verification System)

Description: eFDVS is a web-based program management tool with the purpose of classifying and setting targets against the requirements that exist in a database. e-FDVS is used early in the program to plan tests and prototypes as well as monitor the level of target setting against program metrics. It is used later to monitor test results against program metrics.

This tool records and tracks the creation and execution of a total vehicle/system design verification plan and report (DVP&R) for all applicable corporate, regulatory, and customer requirements/targets. In addition, it delivers the verification documentation for engineering sign-off. This requirements driven verification system applies standardized requirements and verification methods in order for vehicle programs to achieve higher levels of product quality & customer satisfaction.

Established: 2001

User Profile: a fairly broad range of engineers and target setting activities including Vehicle integration engineers, design & release engineers, Program Module Team (PMT) leaders, Program Management analysts.

Training requirements: Brief formal training

Frequency of Tool Use: medium use; weekly/daily/monthly dependant on user

AVBOM - Advanced Vehicle Bill of Materials

Description: AVBOM is a web-based application tool for managing the program's bill of materials. AVBOM was intended to be a single point entry for the program parts list and would link to WERS which contains all part release information. It has met with very little success due to poor linkage with WERS. It became a second place for engineers and analysts to input part information. It is no longer in use on the programs in our study.

Established: ad-hoc vehicle program driven, year introduced 2002

User Profile: Engineers and program management analysts

Training requirements: none

Frequency of Tool Use: low/sporadic use; weekly/daily/monthly dependant on user

GPLUS

NOTES FOR SLIDE 4 CONT.

Description: GPLUS is a web-based repository for Program Direction Letters (PDL). The Program Manager is responsible for program planning and the PDL is the primary tool for expressing product content and direction. This is the letter that provides the engineers direction to proceed. GPLUS as a tool provides a standardized method for writing, reviewing, approving, collaborating and storing PDLs. Authors, reviewers, approvers and other program personnel access PDLs through GPLUS.

Established: 2001

User Profile: Intended to be used by a few specialists including Program management analysts/supervisors, PDL collaborators and approvers

Training requirements: brief formal training

Frequency of Tool Use: medium use; weekly/daily/monthly dependant on user

e-Room

Description: eRoom is a web-based data management tool used by the program team to store and manage program data and information. ISO files, file storage, BOM's... used by PM personnel. Cross vehicle sharing...

Established: ad-hoc vehicle program driven, year introduced 2000

User Profile: Intended for program wide access and use. Security features manage access but typically all members of a program team and functional engineers working on project are granted access.

Training requirement: learn as you go.

Frequency of Tool Use: low/sporadic use; weekly/daily/monthly dependant on user

WERS

Description: WERS is an information system that manages and communicates part information to organizations and downstream systems. WERS enables Ford to fully realize its goal of developing global products by commonizing its engineering information systems and practices. WERS facilitates communication between engineering and manufacturing, consolidates worldwide business practices, and eliminates redundant design efforts between regions.

Used by PM to manager risk by reporting concern count and aging, part changes/revisions or new parts, cost updates, tooling additions, funding, identifies durability and corrosion issues. It additionally identifies durability issues, corrosion, material specifications, market usages, torque requirements, fastener finishes, etc.

Established: 1980's, a mainframe database system containing information on millions of components, corporate standard.

User Profile: A few specialists. Most frequently used by design & release engineers and analysts as well as PMT leaders and Plant Vehicle Team engineers. Program management analysts use for change control process.

Training requirement: Significant formal training

Frequency of Tool Use: high/heavy use; weekly/daily/monthly dependant on user

NOTES FOR SLIDE 4 CONT.

AIMS

Description: The Automated Issues Management System (AIMS) application is designed as a vehicle issues tracking and management system for vehicle launches (both digital and physical prototypes). Vehicle issues found during the product life cycle (FPDS Build Phases - KO thru J1+90) are entered into AIMS via a web interface. Typically, launch & design teams meet weekly with program management to review the issues and their status. Teams utilize AIMS, and the reporting features of the system, to conduct program health meetings, and determine priority and assignments of tasks, etc.

AIMS is a Vehicle Operations (owners) tool that identifies assembly issues during the launch phase. The use of AIMS is defined as an FPDS deliverable and is linked into WERS concerns.

AIMS is an adapting tool used during build phases.

Established: 1996 (estimated)

User Profile: Used by a few specialists. PM analysts, Launch team (PD and mfg.)

Training requirement: Learn as you go

Frequency of Tool Use: medium use; weekly/daily/monthly dependant on user

MS Project / Excel

Description: Microsoft Project and Excel are used by project management analysts to plan program timing and develop work breakdown structures. MS Project Gant chart functionality is typically used for communication purposes to program management. The program VPP (Vehicle Program Plan) is developed using MS Project. Excel is also used for ad hoc monitoring of issues (being replaced by the more integrated E-Tracker tool).

Used to write reports.

Established: 1997

User Profile: Very broad use. PM analysts and contract timing personnel

Training requirement: No formal training, learn as you go

Frequency of Tool Use: high/heavy use; weekly/daily/monthly dependant on user

ColorTrax

Description: ColorTrax is a web-based database of the complete list of vehicle appearance components. ColorTrax contains all color, gloss, texture and material information for appearance items. Program management personnel are responsible for appearance sign-off and use ColorTrax as a monitoring tool to record status of appearance items.

Established: 2000

User Profile: PM analysts, color & trim specialists, design quality specialists

Training requirements: No formal training required

Frequency of Tool Use: low/sporadic use; weekly/daily/monthly dependant on user

NOTES FOR SLIDE 4 CONT.

CRID

Description: This tool is a cross-functional database of cost reduction proposals (Ideas). It is an on-line information system that tracks cost savings proposals through their various stages of development and provides its user community with a common and uniform method of managing and reporting the proposal process.

Established: 1992

User Profile: Corporate wide use by PM specialist, very few in-house individuals use CRID, Contract cost reduction group and primary users

Training requirement: brief formal training

Frequency of Tool Use: medium use; weekly/daily/monthly dependant on user

EFT (Engineering Forecast Tool) - Client/Server (Important but not on survey)

Description: The Resource Management System (EFT, previously RMS) was developed to enable vehicle program analysts accurately plan resource allocation for new vehicle programs in terms of dollar expenditure and headcount required to support the FPDS process used in vehicle program development.

Established: 2002

User Profile: PM analyst/ supervisor/ manager

Training requirement: brief formal training

Frequency of Tool Use: Low/sporadic use at beginning of program with intermittent updates throughout program.

METHODS

AST (Appearance Steering Team)

Description: The Appearance Steering Team is lead by program management and included weekly meetings where during the planning phases of the program, appearance components and subassemblies are presented by suppliers and design and release engineers to the chief engineer (and program manager) for review and approval. Anything that has an impact on vehicle appearance is reviewed in the AST. The AST is a process or method used to manage the development of a vehicle. Program Management conducts this meeting.

Frequency of Method Use: weekly

PST (Program Steering Team)

Description: The PST method or process is a meeting where the program steering team reviews the status of program. Items discussed in the PST meeting are timing, next events, issues, metrics and deliverables. The PST is the primary program team meeting and it takes place weekly. Program management conducts this meeting and manages the items to be discussed.

Frequency of Method Use: weekly

NOTES FOR SLIDE 4 CONT.

PMT (Program Module Team)

Description: The PMT originally consisted of a PMT leader and a few dedicated functional engineers. The PMT reported directly to the Chief Program Engineer and indirectly to the Program Manager. The function of the PMT was to do the engineering work for each major partition of the vehicle; chassis, body, power train, electrical system. With recent reorganizations, functional engineers were removed from the dedicated program team and now report to functional chief engineers. The PMT is now an individual who reports to the Chief Engineer and Program Manager and has no direct reports but interfaces between the functional areas and the program team. This method represents a meeting that the PMT leader holds with the functional engineers in order to interface with program specific issues.

Frequency of Method Use: weekly

PIR (Program Implementation Review)

Description: PIR is a reporting method or practice that is part of the Integrator system of tools and practices. PIR is a formal review with director level program management where the PIR deliverables (a subset of FPDS deliverables) are reviewed in detail. Assessments, issues, action plans, timing and performance are reviewed.

Established: 1998

User Profile: Deliverable owners and executors (could be anyone on the program team) provide deliverable information (assessments, issues, performance) and load documents into the integrator. Program management analysts administer web-based tool. Program manager, chief engineer and other key managers attend review.

Frequency of Method Use: One month before each Milestone

Change Control

Description: Change Control is a meeting run by PM and uses WERS to review concerns (part changes). Purpose is to get status of concern and approval or rejections. Tracking tool to track concern from moment of birth to completion. Report out meeting for all concerns. Attended by PM analysts, Program Manager, Chief Engineer, PMT leader, manufacturing and finance.

Frequency of Method Use: weekly

Milestone Reviews

Description: Milestone reviews are meetings that determine whether the milestone deliverables are met before proceeding to the next gateway. Deliverables vary depending on the gateway event. These reviews require the chief engineer to review the targets, deliverables and status of the program before an executive review board consisting of directors and VPs from product development, manufacturing and other areas.

Frequency of Method Use: At each Milestone

NOTES FOR SLIDE 4 CONT.

PAT (Program Attribute Team and Program Action Team)

Description: Program Attribute Teams are cross-functional teams established for the purpose of delivering specific program attributes, for example, package, noise vibration harshness (NVH), windnoise, and weight. Ergonomic teams attempt to drive specific attribute targets for systems and components. Program Action Teams are cross functional teams established to address key activities and deliverables of the program for example, capacity planning, owner guide development, color harmony, customer satisfaction.

Frequency of Method Use: weekly

MCR (Material Cost Reductions)

Description: MCRs are actions that provide cost reductions to the component, system or process. MCR proposals are tracked in the CRID database that is used by Program Management to determine if cost savings targets are met for each functional area.

Frequency of Method Use: weekly

Design Reviews

Description: Design reviews are meetings conducted by Program Management. Items covered in the review are engineering related issues that require the Chief Engineer and Program Manager to provide direction and final decisions. These meetings typically entail trade-offs of attributes resulting from the designs of multiple systems that are interacting with each other.

Frequency of Method Use: Ad-hoc

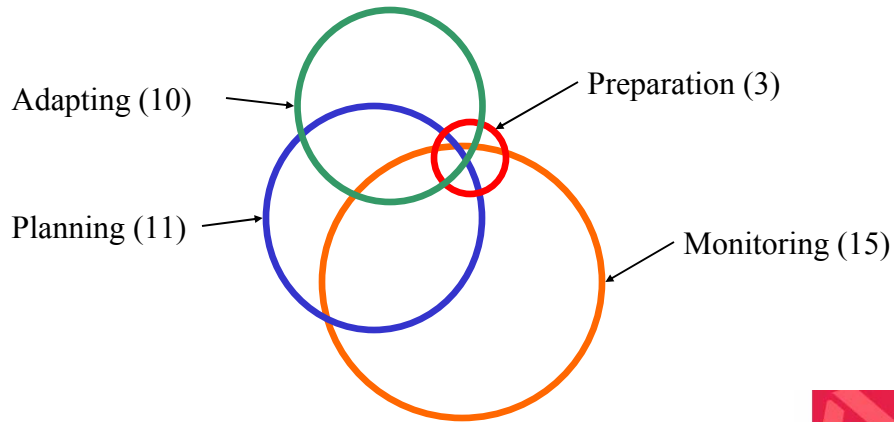
Color Harmony Reviews

Description: Color Harmony Reviews are meetings that include the Design Quality group, Program Management, suppliers and engineers responsible for releasing components. The purpose of these reviews is to ensure the color and texture harmony of all exterior and interior appearance items. When new appearance related features are released (grains, colors, glosses, fabrics and paints) the team's function is to make sure that these features create a compatible environment and meet studio design intent.

Frequency of Method Use: Once, at specified deliverable and milestone

Relationship to Project Management Framework

Venn Diagram: Tools and Methods Overlap



Slide 5



The Size of the Circle is representative of the number of tools and methods present at each phase of the project management framework.

Yes, there appears to be some redundancies among the tools. Seems to be accidental.

See Presentation Appendix for Table of Tools and Methods and their relationship to the Project Management Framework (slides 22 & 23).

Tools and Methods Categorized

- IT Tools Unique to Ford
 - Task management
 - Document and Information Management Tools
 - Resource management
 - Timing
 - Reporting Tools
 - Databases
- Standard Tools (MS Project[®], Outlook[®], etc.)
 - Work planning
 - Scheduling
 - Communication Tools (presentations, visuals)
 - Reporting
 - Industry standard tools
- Meetings/ Reviews (Methods)
 - Defined by FPDS deliverables and ad-hoc

Slide 6



Unique tools to Ford – developed by IT group

Ford has developed many unique tools for specific needs in managing tasks such as deliverable management, reporting and document management

Standard Tools

Off-the shelf applications are used extensively for reporting, work planning, scheduling, communication and presentations

Industry standard documents are used in the case of Color Harmony appearance approvals (standard form familiar to all suppliers that deal with the Big Three).

Meetings and reviews

Meetings and reviews fall under the category of methods. Most are defined by FPDS explicitly as an ongoing activity or one time deliverable.

Assessment of Tools and Methods

- Survey results (quantitative)
 - SUV program vs. Car program
 - Tool and Method satisfaction (effectiveness)
 - Tool usage frequency
- Interview results (qualitative)
 - Use varies from broad to specialized
 - Insights into tools not mentioned in survey and the culture behind the tools and methods
 - Most important Tools and Methods

Slide 7

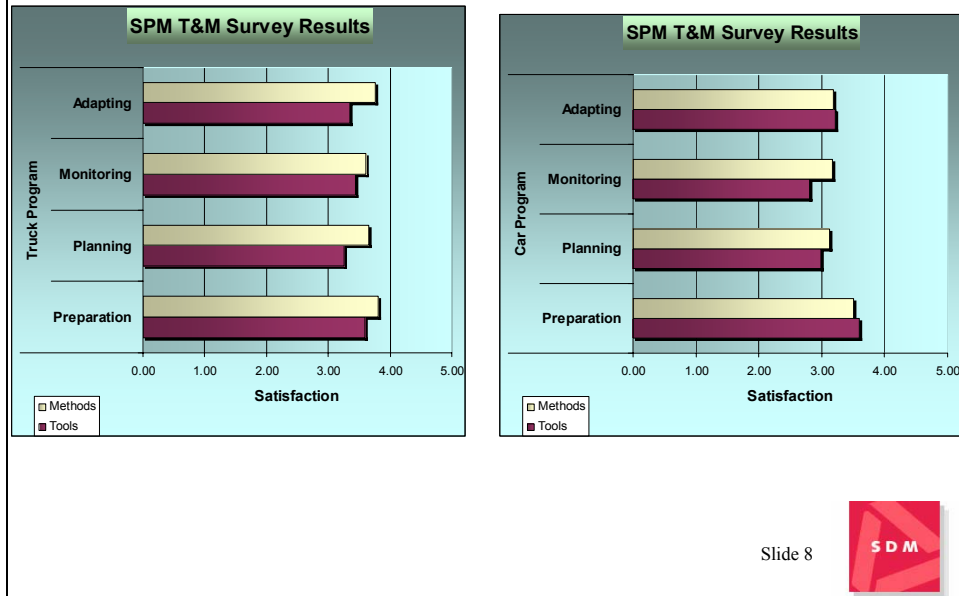


Definition of Tool versus Method

Tool – is defined as a software application or solution that aids program management in preparing, planning, monitoring and adapting throughout the project and to meet cost, schedule and performance targets.

Method – is defined to be a practice or approach used by program management in order to prepare, plan, monitor and adapt the project to meet cost, schedule and performance targets.

Survey Results: Satisfaction



Slide 8



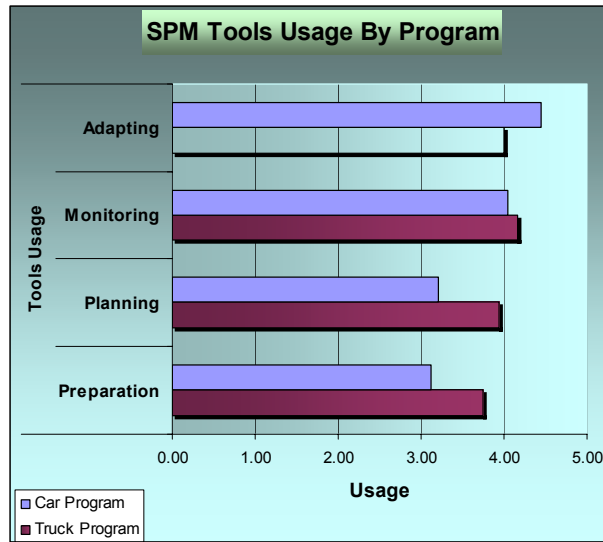
Comparison of Car and Truck T&M's in each area of framework.

Tools usage is a normalized representation of frequency

Observations:

- Poor results of PIR & Milestone Reviews on the SUV program are a reflection of how the CNE utilizes the methods. The meetings are used to 'spotlight' the problem issues in front of executive level management. Meetings are perceived negatively since the result is a 'spanking' instead of giving meaningful assistance to the program system level teams.
- AVBOM discontinued on the SUV program due to problems with legacy systems (GPIRS), not supported by Pre-Production Management (PPM). Not used by Car program.
- SUV PM group attempting to whittle complexity of tools used by reviewing specific milestone deliverables (prior to deadline), and simplifying the deliverables to a specific number of inviolable. Has been successful for this SUV's PA (Program Assumption) event.

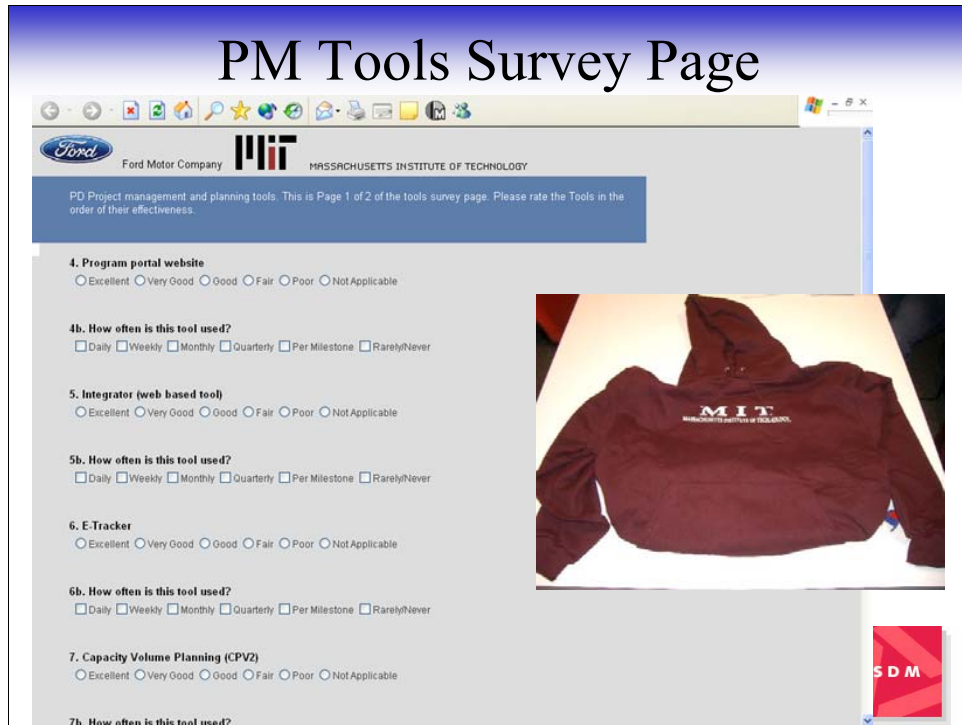
Survey Results: Usage



Slide 9



Preparation tools and methods are used least and yet have higher average satisfaction. There are also fewer preparation tools, this may be why there is lower usage.



Screen print of web-based survey sent to 48 program management personnel. There was a 35% response rate... without the MIT sweatshirt the response rate most likely would have been much lower. This response rate is an indication of how busy all the tools and methods they use cause them to be.

Most Important and Effective Tools and Methods

- Integrator[®] – Driven by PD executives be the core tool to manage programs. Is a *system* of tools and practices.
- E-Tracker[®] – Widely used tool for capturing and managing issues to closure. Integrated with Integrator or stand alone (ad hoc). Currently ~ 6,000 projects.
- MS Project[®] – Vehicle programs are broken down into small projects and workplans using MS Project.
- Email – Not included in survey but follow up interviews told us how important it is. Most important tool for “are you done yet?”
- Program Steering Team – weekly meeting
- Program Module Team – Engineering interface with program

Slide 11



After reviewing the numerical results and interviewing program management personnel, the most effective tools and methods were identified.

Tools & Methods listed above are results from survey & phone interviews

Resource Maintenance of tools:

e.g. Older legacy system, CRID created in 1992 requires 4 developers to maintain and improve the tool

Newer system, eFDVS created in 2001 requires 20 developers

Integrator[®]

- A template for vehicle programs (100 years of developing autos has lead to this arrangement of tasks)
- Everything that needs to be done to develop a vehicle
- Scaleable
- Requires further definition by program team

Integrator is a single-point-of-entry reporting tool for:

- **Program Milestone Reporting**
 - Monthly report to PMM assessing Program compliance to approved milestone dates
 - Compares actual and planned Milestone Approval dates vs. PMM (<SI>) Approved timing
- **EQOS Reporting**
 - Supports metric-driven reviews of engineering deliverables and disciplines at CFE level
 - Content overlaps Program Deliverables/Metrics, but includes metrics showing greater detail for delivery of engineering content
- **PIR Reporting**
 - Supports metric-driven reviews of Program Health
 - Content is subset of FPDS QOS Deliverables and Metrics
 - Review process varies among Clusters and Brands
- **Inviolable Reporting**
 - Inviolable Deliverables are a subset of the PIR deliverables that must be Green at the respective milestone

Slide 12



Integrator is the “Big Daddy” of Ford program management tools.

Status of PM Tools Discussed in Class

- CPM – Widespread use and well known
- DSM – No evidence of use in PM, used in other areas to understand interactions
- Critical Chain – No evidence of use. Interviews suggest cultural obstacles.
- System Dynamics – currently used on one vehicle program (not the programs we studied). Pushed by one director.

Slide 15



CPM – widespread use. PM analysts tend to analyze critical path in smaller subsets of tasks. Indication that CPM doesn't work when there are iterations and rework.

DSM – Found no evidence that DSM is used to manage vehicle programs.

Critical Chain – not used

System Dynamics - currently used on one vehicle program (not the programs we studied). Pushed by one director since 1996. System Dynamics department for program management was once five analysts and a supervisor, it now consists of one analyst who works with outside consultants. Jaguar uses much more extensively.

The model helps program management to understand end-game ramifications of timing decisions, e.g., vehicle operations requested study to pull ahead job #1 by one month to align with plant shutdown. The System Dynamics model was used to understand the tradeoffs between compressed timing and the cost of having a second shutdown for launch. It was considered to be quite effective.

One Chief Engineer was excited by the understanding the model provided saying that the model “doesn't tell me anything I don't already know at a gut feel level but is more specific and targeted, the model tells me exactly where and why.”

Conclusions and what we think of it all...

- There is good consistency among programs in Tools and Methods used
- There are many redundant tools that have been developed ad-hoc, e.g., document and information management
- Costly tools commissioned by managers not adopted or maintained, e.g., AVBOM
- An emphasis on monitoring tools (may be too many)
- Too much functionality in a tool can render it ineffective...a tool intended for broad use will then require dedicated specialists...which defeats the whole purpose.
- Must simplify and integrate...

Slide 16



- Average cost to create tool begins at \$10,000 not including number of resources to develop, maintain or modify system
- More tools are being introduced, e.g Software Change Control to track incompatibility issues, to aid the electrical backbone engineers
- Mentioned on 12/1 by Chris Theodore (VP Advanced Product Creation) “One set of data shared by all on a real time basis” – there is a need to have access to the same data to enhance communication and coordination. However, no tool has so far within Ford succeeded in accomplishing this goal.
- Consensus based on the results of this survey, is that there is a growing cynicism about the usefulness of the tools driven on the engineers. The tools appear to be created as a better tracking system of management deliverables for vehicle targets. Tools and Methods employed are not offsetting the regular work of the engineers (information tracked from). Appears to be a growing need to CONSOLIDATE some of the tools
- Important aspects missing from the ESD.36 course based on research? Appears that the ‘Soft skills’ covered very briefly in one lecture are extremely important in becoming a successful PM analyst (mentioned by PM supervisor as essential to ‘make system flow’). Interesting enough main requirements for program management within Ford are the following:
 - Requires knowledge of the FPDS system
 - Completed generic safety training
 - Familiarity with Microsoft outlook
- PMA’s program management analysts are OUTSOURCED by Ford
- Program management of these programs has expressed an interest in the results of the survey, and requested final conclusions

Anecdotes...

- 1995: Major improvements in Jaguar's quality, Ford asks them how they did it...turns out they were just following Ford's PD process.
- When owners and executors of deliverables don't keep up their assessments of deliverables, the PM analyst becomes a TCE (Tracker, Checker and Enforcer)... an "ankle biter" continually asking: "are you done yet?"

Slide 17



Questions?

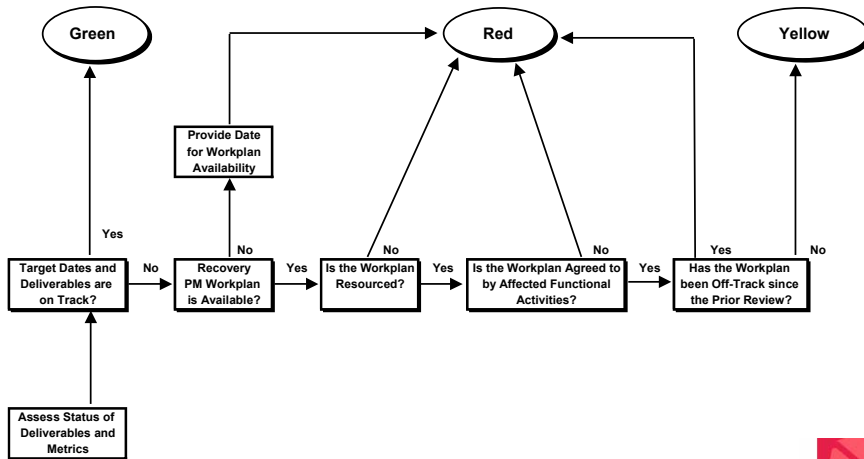
Appendix Follows

Slide 18



Churning: Assessments and Glide paths

Decision Tree Deliverable and Metric Assessments



Slide 19



Relationship to Project Management Framework

Tools	Preparation	Planning	Monitoring	Adapting
Program portal website			X	
Integrator (web based tool)			X	
E-Tracker			X	X
Capacity Planning Volume (CPV2)		X	X	X
e-FDVS (Ford Design Verification System)		X	X	
AVBOM - Advanced Vehicle BOM		X		
GPLUS (PDL)	X	X		
e-Room			X	
WERS				X
AIMS				X
MS Project/ MS Excel		X	X	X
ColorTrax		X	X	
CRID				X

Slide 20



Relationship to Project Management Framework

	Preparation	Planning	Monitoring	Adapting
Methods				
AST (Appearance Steering Team)		X		
PST (Program Steering Team)	X	X	X	X
PMT (Program Module Team)	X	X	X	X
PIR (Program Implementation Review)			X	
Change Control			X	X
Milestone Reviews			X	
PAT's (Program Attribute Teams)		X		
MCR (Material Cost Reductions)				X
Design Reviews		X	X	
Color Harmony Reviews			X	

Slide 21

