PBS Technology Conference
DTV-ATP Progress Report
April 2001

Digital Television - Advanced Traffic & Programming Project (DTV – ATP)

accenture

PBS

This session has the following three key objectives:

— *Session Objectives* —

- Provide an update on where we are in both the DTV-ATP project lifecycle and the Validation phase timeline

- Deliver information on the progress made to date

- Reiterate the problem statement and show how this initiative intends to address the issues around program trafficking and scheduling for Member Stations

accenture

PBS

Agenda

- **DTV-ATP Project Overview**

- **Solution Scope**

- **Implementation Approach**

- **Wrap Up**

accenture

PBS

To develop a solution to address the key issues and requirements raised by PBS and the Member Stations associated with the Programming, Scheduling, Promotion/Underwriting, and Broadcast Operations Automation functions

Current Environment → ## Future Environment
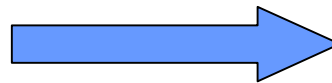
Current Environment

- Separate, non-integrated databases

- Manual Scheduling using spreadsheets

- No integration with member station solutions

- Numerous contacts to producers for similar information

Future Environment

- Unified database available to member stations

- Automated support for schedule development

- Integration between DTV-ATP solution and member stations' trafficking and programming solutions

- Direct Access to programming database by producers

accenture

PBS

The project consists of four phases spread over two years: Validation, Design, Implementation and Deployment

- **Phase I - Validation**
  – Validate solution requirements
  – Identify process change opportunities
  – Select a qualified Software Vendor
  – Update the high-level business case
  – Develop go-forward Project Plan

- **Phase II - Design**
  – Business Model Requirements
  – Refinement of Business Case
  – Create System / Application Architecture
  – Create Prototype
  – Create Change Plan
  – Create Deployment Plan

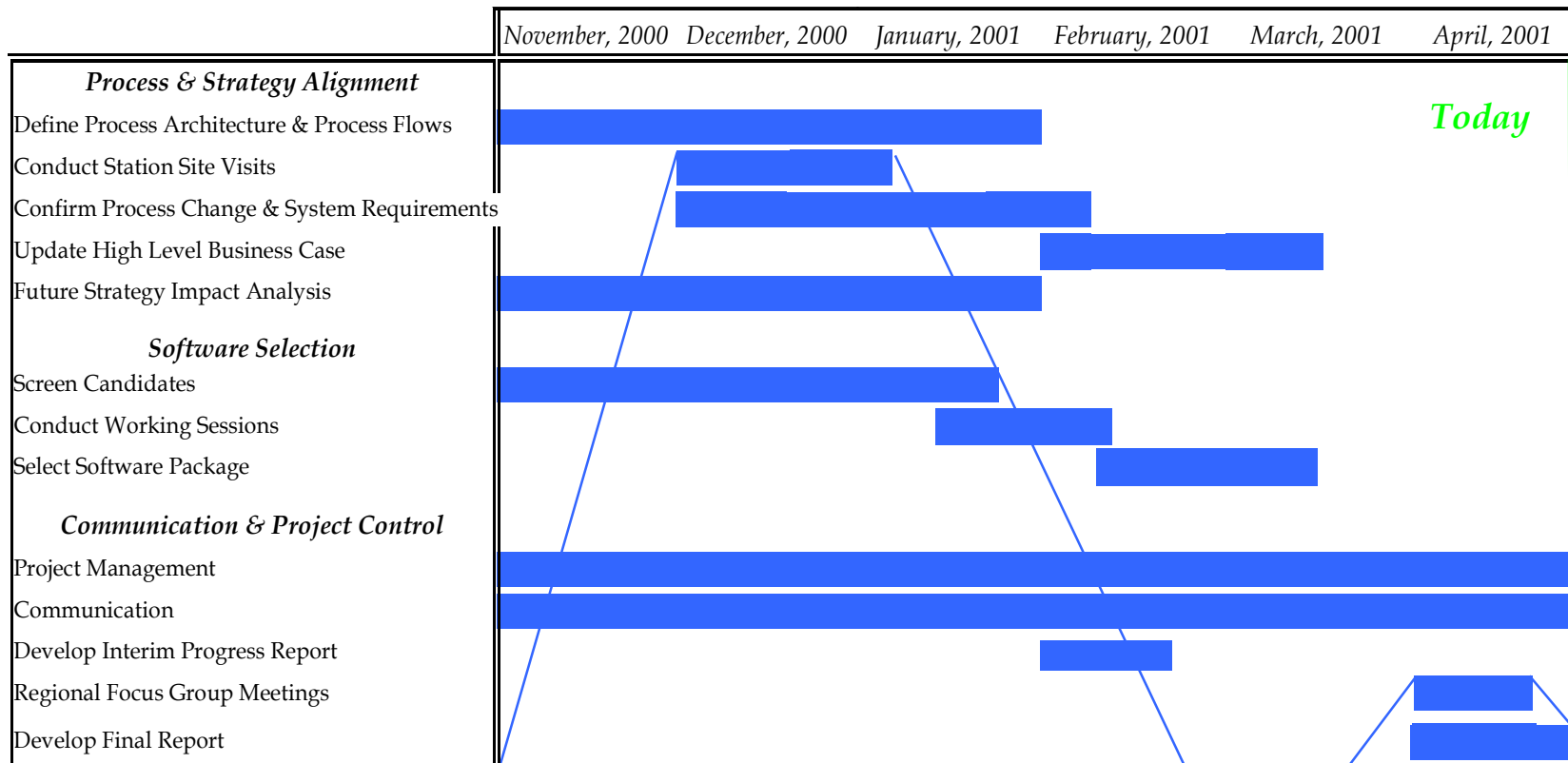- **Phase III - Implementation**
  – Production-Ready Development, Execution, and Operations Architectures
  – Participants and Instructor Training Guides
  – System Test Model
  – Application Built and Tested

- **Phase IV - Deployment**
  – Application Deployed within PBS and all User Groups
  – Train Users
  – Begin Measurement of Success Metrics
  – Confirmation of Business Capability

accenture

PBS

Key activities for Phase I – Validation
- over the six month period from November 2000 until April 2001.

	November, 2000	December, 2000	January, 2001	February, 2001	March, 2001	April, 2001

Process & Strategy Alignment

Define Process Architecture & Process Flows

Conduct Station Site Visits

Confirm Process Change & System Requirements

Update High Level Business Case

Future Strategy Impact Analysis

Software Selection

Screen Candidates

Conduct Working Sessions

Select Software Package

Communication & Project Control

Project Management

Communication

Develop Interim Progress Report

Regional Focus Group Meetings

Develop Final Report

Today

Member Stations in Phase I include:
December 4th, PPTN Hershey, PA
December 7th, WHRO Norfolk, VA
December 14th, KOPB, Portland, OR
December 18th, IPTV, Des Moines, IA
January 4th, WGBH, Boston, MA
January 5th, APT, Boston, MA
January 8th, Sponsorship Group, New York, NY

3 Regional Focus Groups:
March 26th, KCET, Los Angeles
March 29th, WTTW, Chicago
April 5th, WETA, Washington D.C.

accenture

PBS

The pervasive nature and funding requirements of this project emphasized the critical need for Member Station guidance

Executive Steering Committee

Name	Title	Organization
Maynard Orme	President	Oregon Public Broadcasting (OPB)/Portland, OR
David Dial	President & General Manager	WNIN/Evansville, IN
Allan Pizzato	Executive Director	Alabama Public Television/Birmingham, AL
Craig Carter	Senior Director, Broadcast Operations	WETA/Washington, DC
Pat Fitzgerald	General Manager	WBGU/Bowling Green, OH
Dennis Haarsager	Associate VP & General Manager	KWSU/Pullman, WA
Skip Hinton	President	National Educational Telecommunications Association (NETA)/Columbia, SC
Rod Bates	General Manager & Director	Nebraska Educational Television (NETV)/Lincoln, NE
Bruce Jacobs	Chief Technology Officer	Twin Cities Public Television / Minneapolis-St. Paul, MN
Andrew Russell	SVP, Media	CPB
Beth Wolfe	EVP & CAO	PBS
Robert Altman	SVP, Development	PBS
Ed Caleca	SVP, Technology & Operations	PBS
Cindy Gertz	SVP, CFO	PBS
Cindy Johanson	SVP, Broadband	PBS
Steve Gray	VP, Program Scheduling	PBS
Jim Guerra	SVP, Program Business Affairs	PBS
Pat Hunter	VP, Programming Financing	PBS
Gwen Wood	VP, Operations	PBS
John Tollefson	VP, CTO	PBS
Judy Harris	EVP, Programming	PBS
Mark Bronfman	Strategy Partner	Accenture

accenture

PBS

The Core Team consists of representatives from key PBS business areas and subject matter experts from Accenture

Accenture Core Team	
Name	**Title**
Mark Bronfman	Project Partner
Geraldine Evans	Project Manager
Mark Daniel	Process Manager
Cynthia Ho	Process Consultant
Matthew Boggie	Technology Consultant

PBS Core Team		
Name	**Title**	**Organization**
Michael Hunt	Project Lead	Information Technology
Steve Scheel	Senior Director	Technical Services
Andy Butler	Senior Director	Engineering
Christine Beinhacker	Senior Manager	DTV Strategic Services
Glenn Clatworthy	Director	Program Data & Analysis
Lauren Kalos	Director	Programming Services
Marilyn Gonzalez	Associate Director	Broadcast Operations
Jim Kutzner	Consultant to PBS	ATTC

*Various PBS and Station Subject Matter Experts were consulted on an as needed basis.
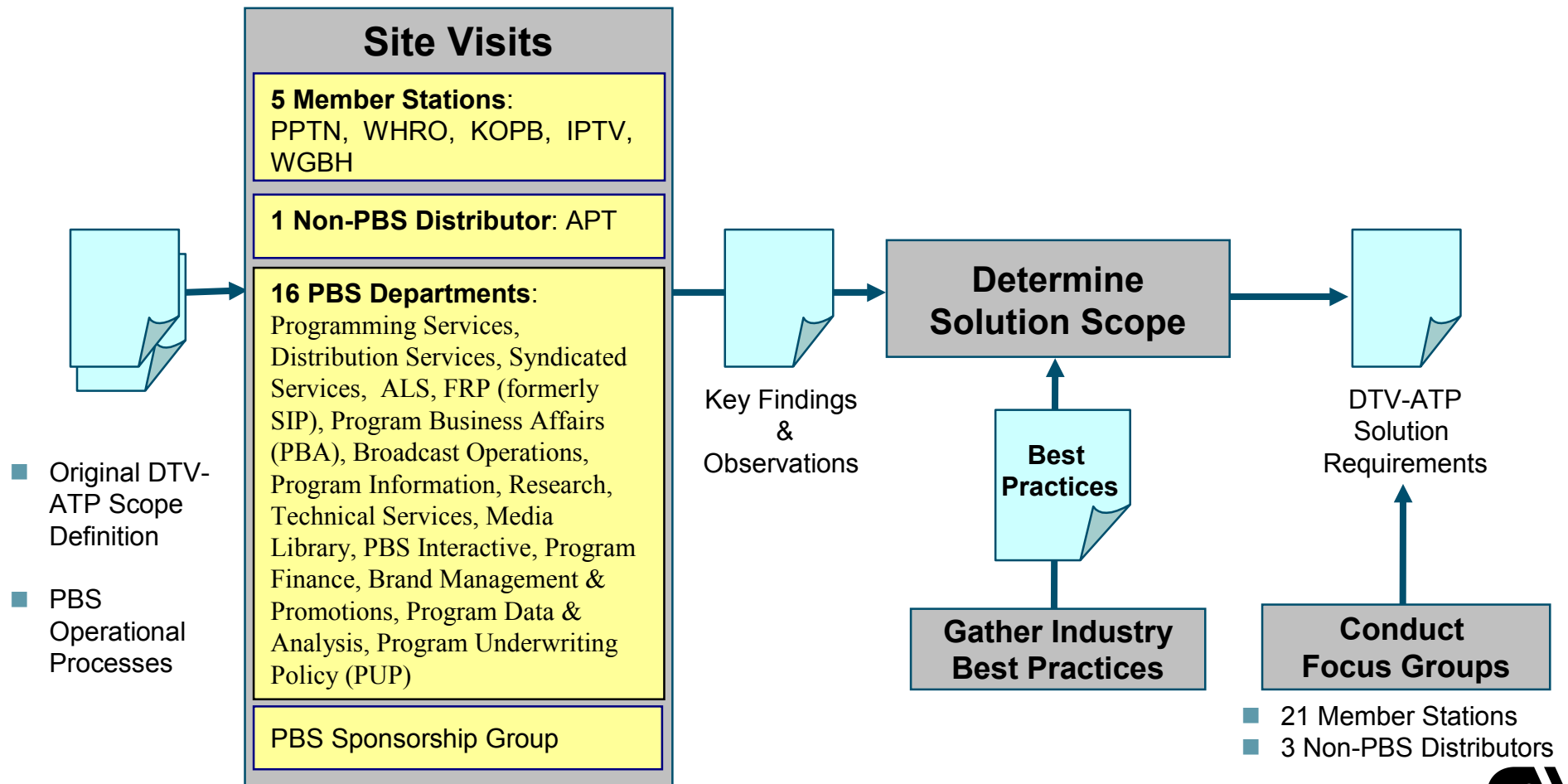
accenture

PBS

DTV-ATP Project Overview

Solution Scope

Implementation Approach

Wrap Up

Conducted extensive set of interviews with PBS, Member Stations and Non-PBS Distributors

Site Visits

5 Member Stations:
PPTN, WHRO, KOPB, IPTV, WGBH

1 Non-PBS Distributor: APT

16 PBS Departments:
Programming Services, Distribution Services, Syndicated Services, ALS, FRP (formerly SIP), Program Business Affairs (PBA), Broadcast Operations, Program Information, Research, Technical Services, Media Library, PBS Interactive, Program Finance, Brand Management & Promotions, Program Data & Analysis, Program Underwriting Policy (PUP)

PBS Sponsorship Group

- Original DTV-ATP Scope Definition
- PBS Operational Processes

Key Findings & Observations

Determine Solution Scope

Best Practices

Gather Industry Best Practices

DTV-ATP Solution Requirements

Conduct Focus Groups

- 21 Member Stations
- 3 Non-PBS Distributors

accenture

PBS

Several fundamental challenges were confirmed during the Validation Phase

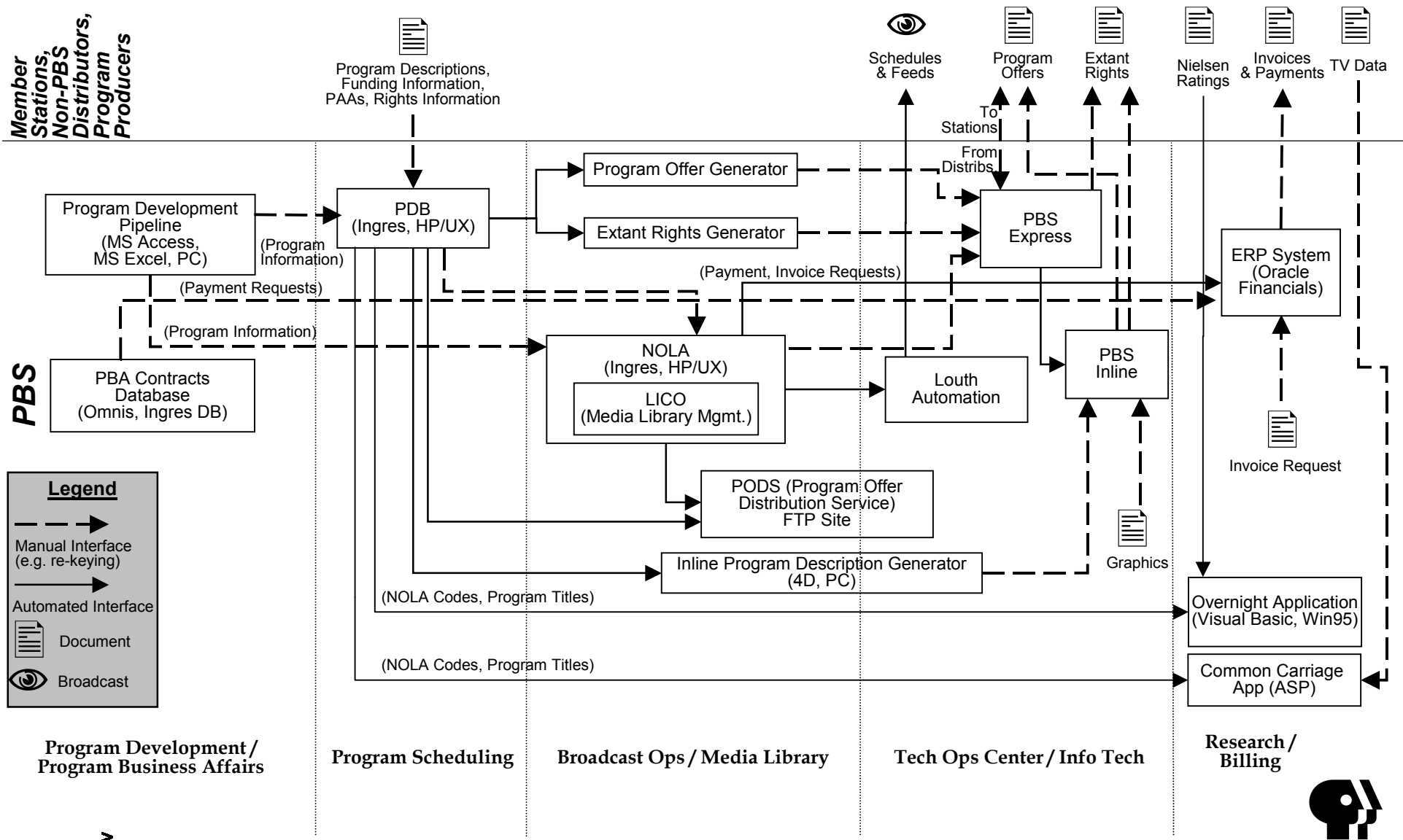- Non-timely delivery of inaccurate, poor quality data

- Need for multi-channel support

- Current systems are not extendable

- Lack of standard workflow

- Producers are frustrated by the process

- Underwriting is becoming more complex

- Requires manual tracking of ancillary revenue, music rights, and producer payments

- Rights usage not audited

accenture

PBS

Recurring themes, hunter / gatherers navigating through the "black hole"

- **Duplication of Effort**

- **No Ad-hoc Reporting**

- **Data is inaccurate and not timely**

- **Producers are frustrated with the process**

accenture

PBS

Solution Scope -
The current system is broken

Member Stations, Non-PBS Distributors, Program Producers

Program Descriptions, Funding Information, PAAs, Rights Information

Schedules & Feeds | Program Offers | Extant Rights | Nielsen Ratings | Invoices & Payments | TV Data

To Stations
From Distribs

PBS

Program Development Pipeline (MS Access, MS Excel, PC)

PDB (Ingres, HP/UX)

Program Offer Generator

Extant Rights Generator

PBS Express

ERP System (Oracle Financials)

(Program Information)

(Payment Requests)

(Payment, Invoice Requests)

(Program Information)

NOLA (Ingres, HP/UX)

LICO (Media Library Mgmt.)

Louth Automation

PBS Inline

PBA Contracts Database (Omnis, Ingres DB)

PODS (Program Offer Distribution Service) FTP Site

Invoice Request

Legend

Manual Interface (e.g. re-keying)

Automated Interface

Document

Broadcast

Inline Program Description Generator (4D, PC)

Graphics

(NOLA Codes, Program Titles)

Overnight Application (Visual Basic, Win95)

(NOLA Codes, Program Titles)

Common Carriage App (ASP)

Program Development / Program Business Affairs | Program Scheduling | Broadcast Ops / Media Library | Tech Ops Center / Info Tech | Research / Billing
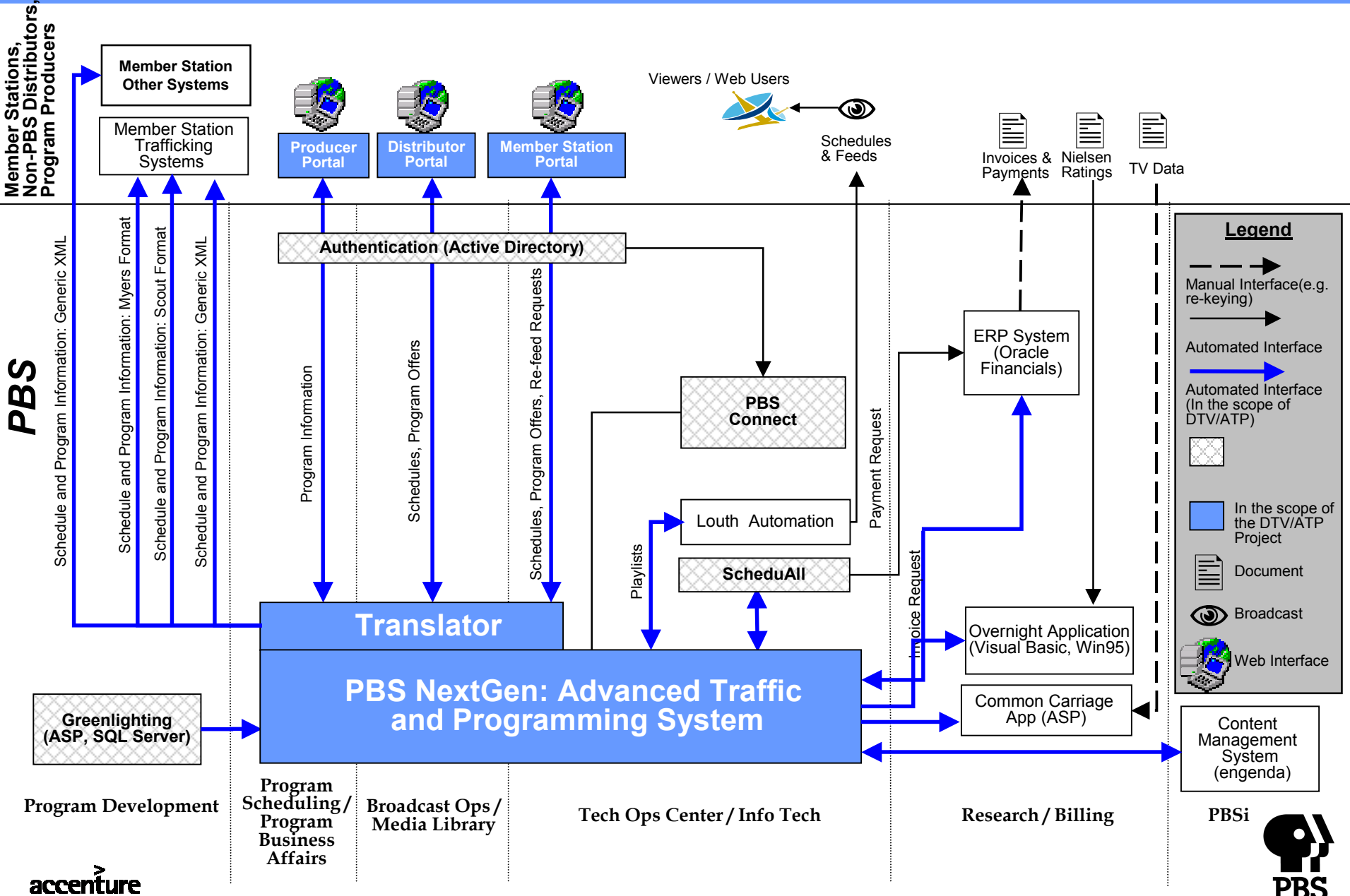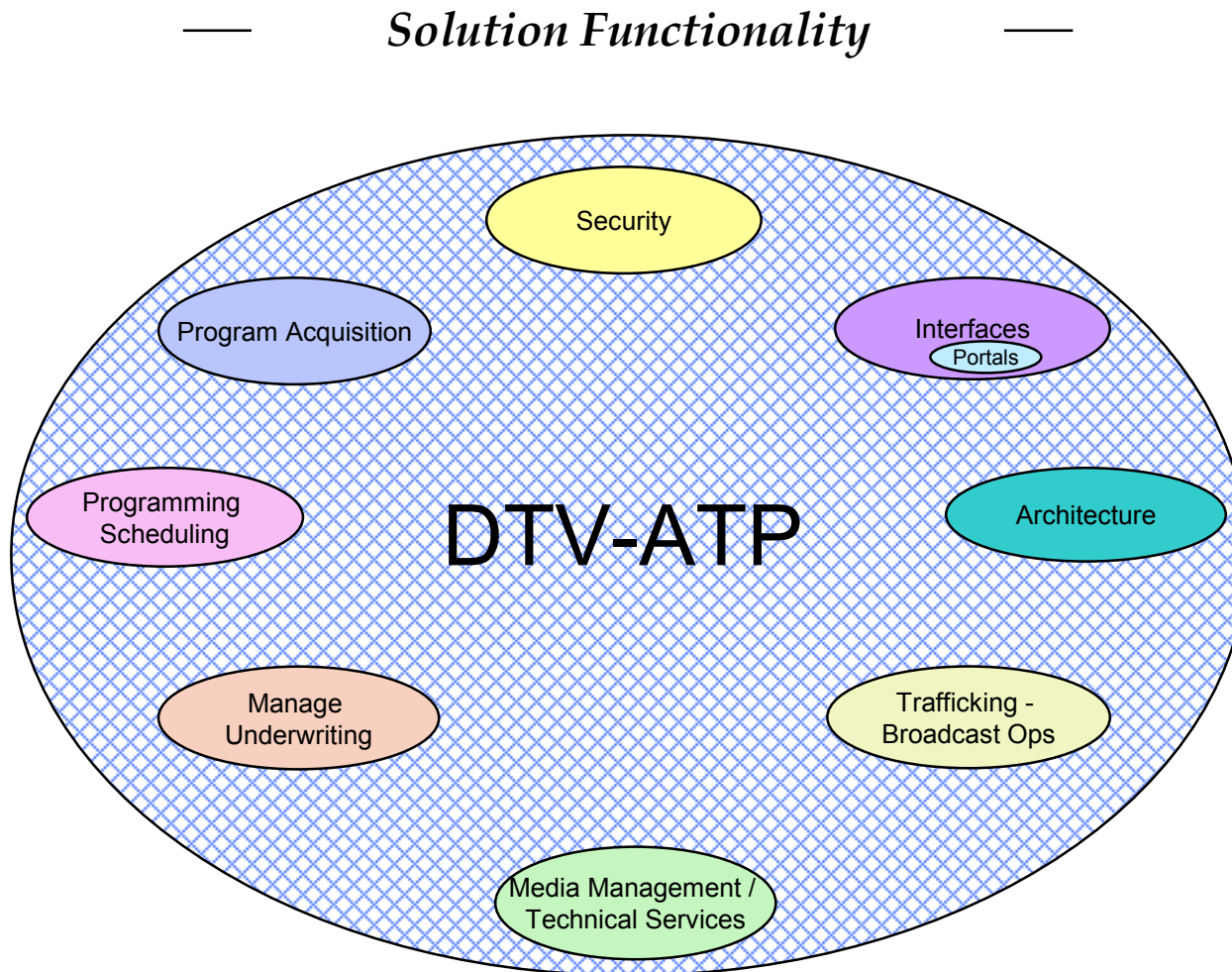
accenture

13

PBS

- **Provide an integrated database**

- **Seamless content flow**

- **Cater to a complex underwriting world**

- **Flexible access to information by Stations**

- **Common standards for data interchange**

- **Improve data quality**

- **Ubiquitous access**

accenture

PBS

PBS

Member Stations, Non-PBS Distributors, Program Producers

Member Station Other Systems

Member Station Trafficking Systems

Producer Portal

Distributor Portal

Member Station Portal

Viewers / Web Users

Schedules & Feeds

Invoices & Payments

Nielsen Ratings

TV Data

Schedule and Program Information: Generic XML

Schedule and Program Information: Myers Format

Schedule and Program Information: Scout Format

Schedule and Program Information: Generic XML

Authentication (Active Directory)

Program Information

Schedules, Program Offers

Schedules, Program Offers, Re-feed Requests

PBS Connect

ERP System (Oracle Financials)

Payment Request

Invoice Request

Louth Automation

Playlists

ScheduAll

Overnight Application (Visual Basic, Win95)

Translator

PBS NextGen: Advanced Traffic and Programming System

Common Carriage App (ASP)

Greenlighting (ASP, SQL Server)

Content Management System (engenda)

Program Development

Program Scheduling / Program Business Affairs

Broadcast Ops / Media Library

Tech Ops Center / Info Tech

Research / Billing

PBSi

Legend

Manual Interface (e.g. re-keying)

Automated Interface

Automated Interface (In the scope of DTV/ATP)

In the scope of the DTV/ATP Project

Document

Broadcast

Web Interface

accenture

PBS

The DTV-ATP solution provides functionality in the following eight core areas:

Solution Functionality

Security

Program Acquisition

Interfaces
Portals

Programming Scheduling

DTV-ATP

Architecture

Manage Underwriting

Trafficking - Broadcast Ops

Media Management / Technical Services

accenture

PBS

	Requirements Overview	Member Station Impact	User Groups
Program Acquisition	■ **Single data repository** for program information AND metadata ■ **Availability of information - ON DEMAND** ■ **Improve efficiencies** - Eliminate Manual re-keying and workarounds needed to compensate for current system deficiencies	■ **Direct, interactive, controlled access** to the most recent data and information on programs, content and schedules ■ **More timely, accurate information** eliminates manual re-keying and time wasted searching for key information	■ ALS ■ Distribution Services ■ Program Business Affairs ■ Program Data & Analysis ■ Program Information ■ Programming Services (NPS, FRP, Syndicated) ■ Member Stations ■ Content Producers
Program Scheduling	■ **Information level playing field.** All schedule information, regardless of distributor, stored in one place ■ **Flexible**. Easily searched, standardized format ■ **Multi-channel** and automated Timezone Scheduling ■ **Alerts and warnings** based on business rules ■ **Remote-access scheduling** for Non-PBS distributors	■ **Alerts/warnings** to information changes ■ **Uniform Access to all schedule information** - regardless of distributor ■ **User Friendly.** Easily searched, standardized format ■ Increased **information delivery** speed allowing for advanced planning	■ ALS ■ Distribution Services ■ Non-PBS Distributors ■ Programming Services (NPS, FRP, Syndicated) ■ Member Stations ■ Content Producers ■ Non-PBS Distributors
Manage Underwriting	■ **Single data repository for National underwriting contracts** information, Sponsorship Group sales and PUP information ■ **Standardized format** that allows for easy analysis and manipulation for reports generation ■ Ability to **track unsold underwriting credits**	■ **Access to timecoded information** on underwriting credits for broadcast ■ **Single data repository** for national underwriting information allowing for better advanced local underwriting sales	■ Program Data & Analysis ■ PBS Program Underwriting Policy ■ Programming Services (NPS, FRP, Syndicated) ■ Sponsorship Group ■ Member Stations

Media Management / Technical Services	■ **Media & space management** - Ability to track the physical location, status and broadcast attributes for all program media acquired by PBS
	■ **Missing media** - Ability to generate status reports on asset location and attributes
		■ **Improved notification to producers and member stations**
		  – for missing or late program tapes
		  – regarding technical issues related to program tapes
			■ Media Library
			■ Technical Services
			■ Broadcast Operations

accenture

PBS

Solution Scope - Requirements

	Requirements Overview	Member Station Impact	User Groups
Trafficking & Broadcast Ops	■ Management of **satellite inventory** ■ **Generation of logs** into multiple, printable formats ■ **Automated export** of information to automation systems ■ **Alerts and warnings** based on business rules	■ **Interactively** view all satellite schedules ■ **Generate traffic logs** in multiple, printable formats ■ Make **re-feed requests**	■ Broadcast Operations ■ Member Stations
Architecture	■ **Consolidation of platforms** - reduce risk associated with support ■ Provides a **fault resilient**, stable architecture	■ **Ubiquitous access**. Provides standard web browser access for stations to enter, search, view and print data related to program information, program schedules and program underwriting.	■ ALL PBS Departments ■ Member Stations ■ Content Producers ■ Non-PBS Distributors
Interfaces / **Portals**	■ **XML-based**, web-enabled interface capability ■ **Automated system to system interfaces**. Information needed by external applications will be provided automatically ■ **Ingestion capability**. The solution accepts information from a variety of sources, including the program pipeline DB and third-party content producers. ■ **Eliminate manual re-entry**. No re-keying of information between systems is needed	■ **On demand information availability.** Documents like program offers and preliminary schedules previously exported manually from PDB and NOLA will be provided upon request via a web interface.	■ ALL PBS Departments ■ Member Stations ■ Content Producers ■ Non-PBS Distributors

Security	■ **Single sign-on**.
	  – Using PBS Connect Authentication functionality to allow registered PTV personnel access to the application based on unique username and role.
	  – Users will not need to remember an additional username and password to access the system.
		■ **Controlled Access**. Access to the solution based on unique username and role, facilitated by single sign on	■ All PBS Departments
			■ Member Stations
			■ Content Producers
			■ Non-PBS Distributors

accenture

PBS

DTV-ATP is one of the components which will help transform the future landscape of public television in the digital world

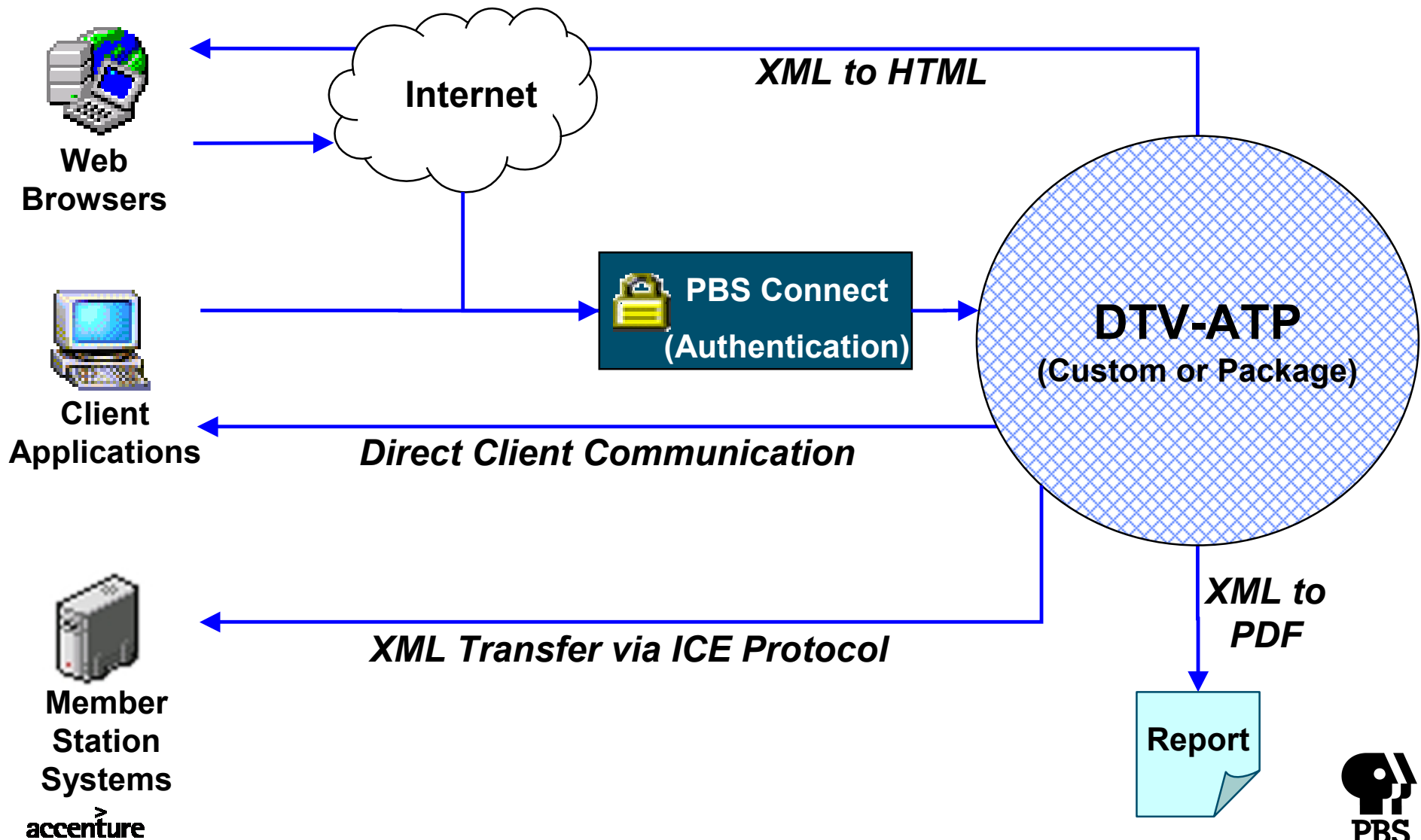| Scope	Purpose	DTV-ATP Benefits

Scope

DTV-ATP

Digital Transition | DTV-ATP

Digital Transition | DTV-ATP | Future Initiatives
Inter-connection | ADDE | DAM

Purpose

Fix Today

⬇

Enable Digital Transition

⬇

Support Future Transformation of Public Television

DTV-ATP Benefits

- Reliability

- Accurate, Quality, Timely Data

- Foundational element for current business operations

- Scale

- New services supported

- Foundational element for future business operations

- Enables linkages & interfaces with other initiatives

accenture

PBS

DTV-ATP Project Overview

Solution Scope

Implementation Approach

Wrap Up

accenture

PBS

DTV-ATP solution will use leading edge technologies and adhere to industry standards

Web Browsers

Internet

XML to HTML

PBS Connect
(Authentication)

DTV-ATP
(Custom or Package)

Client Applications

Direct Client Communication

XML to PDF

Member Station Systems

XML Transfer via ICE Protocol

Report

accenture

PBS

To determine the appropriate implementation approach, the following benefits and tradeoffs of each approach need to be considered

Fully Custom Built

Pros

- Complete flexibility and coverage of requirements

- Zero reliance on capabilities provided by external application software product Vendor

- In-house application support

- Full source code ownership

Cons

- Additional need for internal PBS human capital resource commitment

- Extended timeframe.

- Potential for additional scope creep over elongated implementation timeframe

- One time cost is high

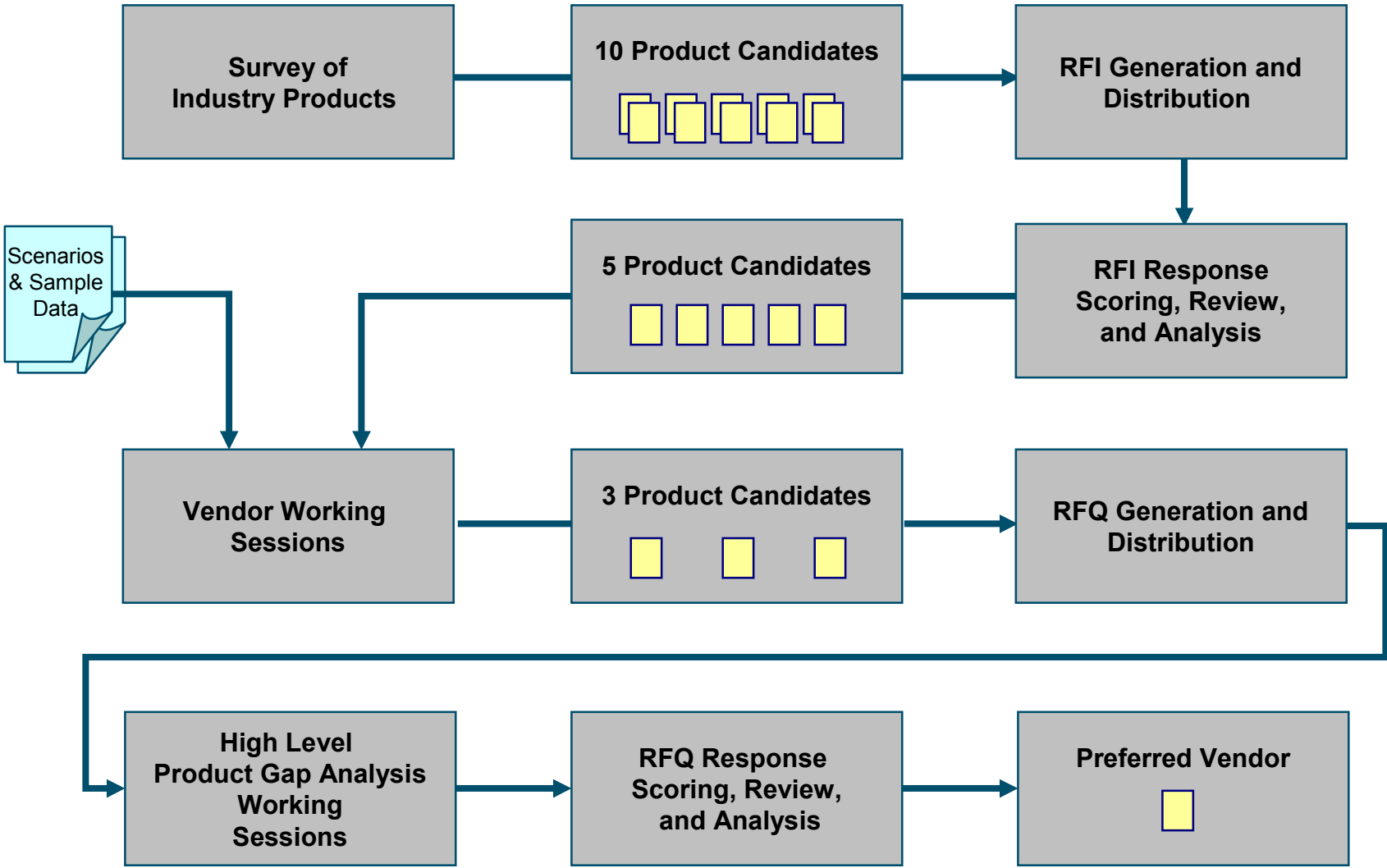### *Package Solution with Customizations**

Pros

- Lower potential one time cost

- Reduced implementation timeline

- Provides standard industry required leading edge functionality with Future R&D in Vendor best interests

- Not reliant on maintaining in-house development resources

- Reduces the number of dedicated PBS human capital resources required to participate in the implementation
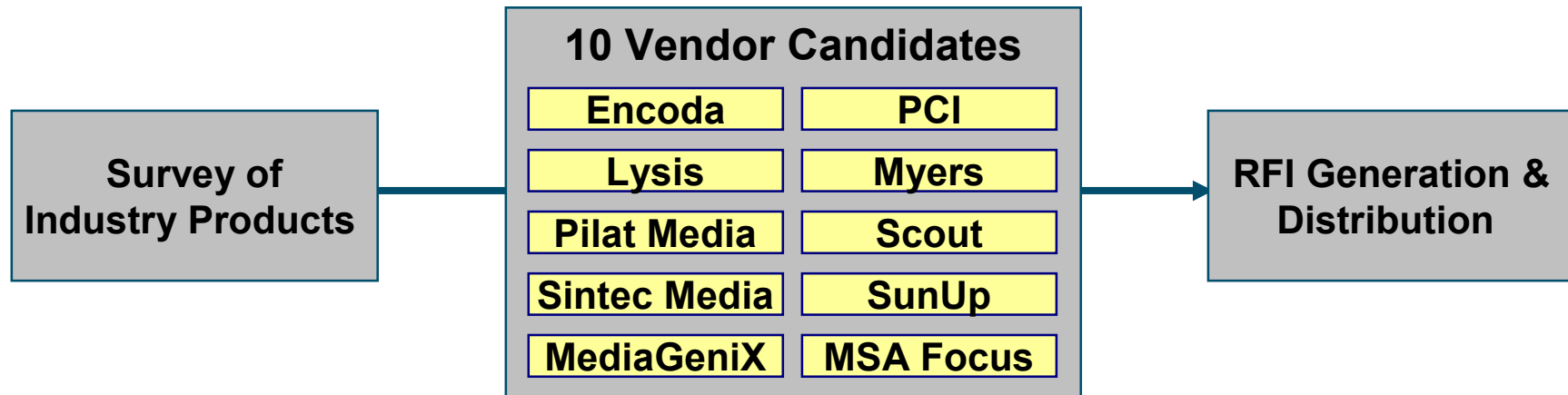
Cons

- Support - Vendors are non-US based

- Source code ownership. Future customizations require Vendor involvement and additional cost

- Requires compromises to be made in how the requirements are satisfied

* Assumes 60-70% of requirements met by the off-the-shelf product. 30-40% of requirements require a degree of customization
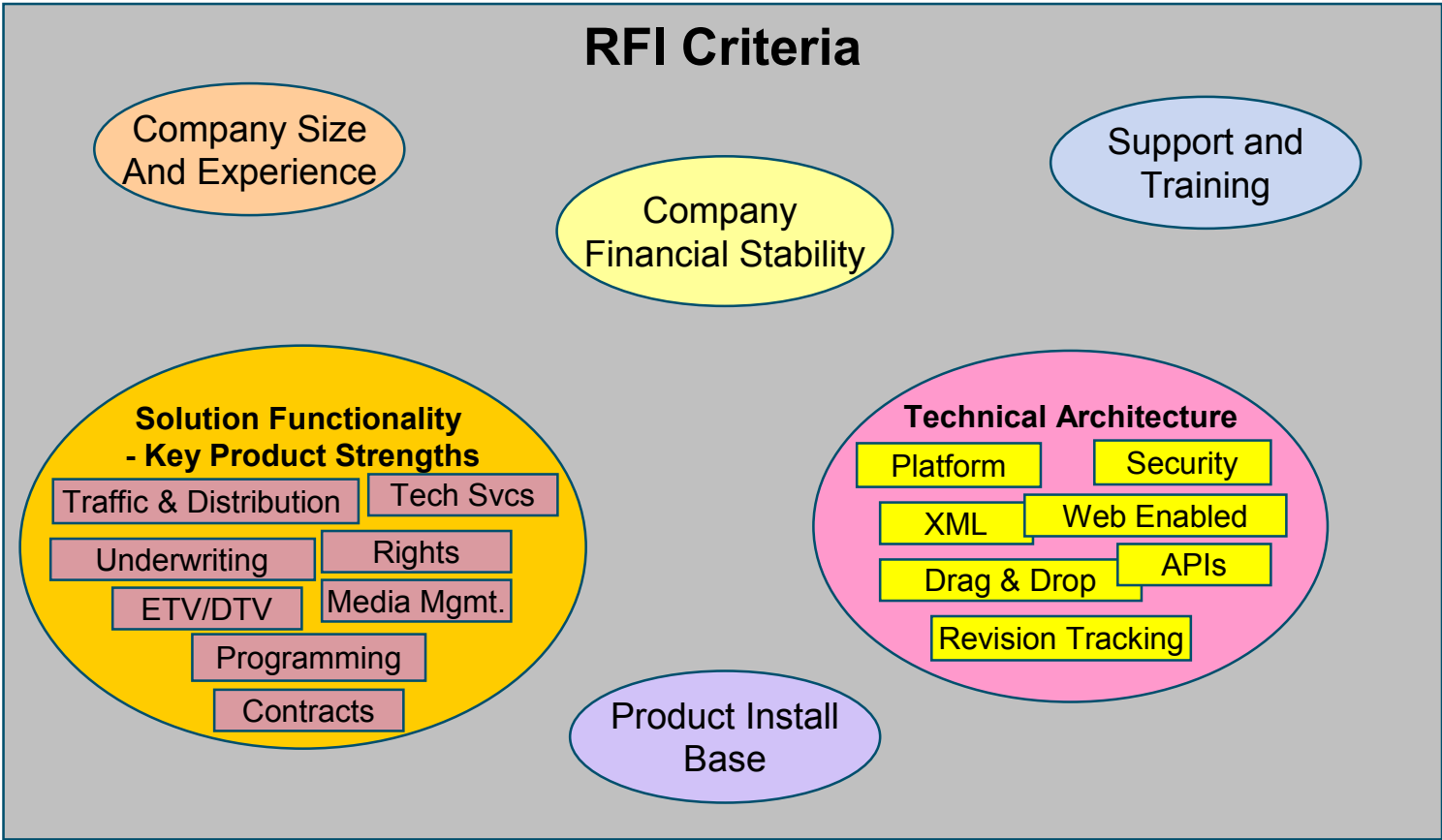
accenture

PBS

22

Implementation Approach -
Software Selection Process Overview

Survey of Industry Products

10 Product Candidates

RFI Generation and Distribution

Scenarios & Sample Data

5 Product Candidates

RFI Response Scoring, Review, and Analysis

Vendor Working Sessions

3 Product Candidates

RFQ Generation and Distribution

High Level Product Gap Analysis Working Sessions

RFQ Response Scoring, Review, and Analysis

Preferred Vendor

accenture

PBS

An initial industry survey revealed ten products whose functionality and target clients matched Public Television's requirements and needs
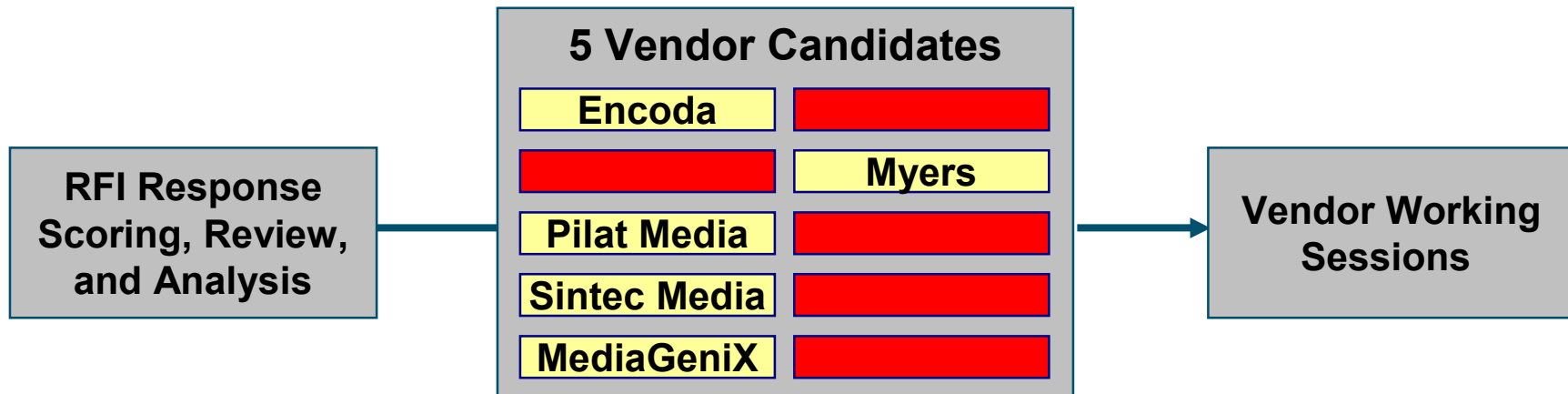
**Survey of
Industry Products**

10 Vendor Candidates

Encoda	PCI
Lysis	Myers
Pilat Media	Scout
Sintec Media	SunUp
MediaGeniX	MSA Focus

**RFI Generation &
Distribution**

accenture

PBS

The RFI was distributed to each of the ten Vendors

RFI Criteria

Company Size And Experience

Company Financial Stability

Support and Training

Solution Functionality - Key Product Strengths
- Traffic & Distribution
- Tech Svcs
- Underwriting
- Rights
- ETV/DTV
- Media Mgmt.
- Programming
- Contracts

Technical Architecture
- Platform
- Security
- XML
- Web Enabled
- Drag & Drop
- APIs
- Revision Tracking

Product Install Base

accenture

PBS

Vendor responses were evaluated and five were eliminated. The remaining five were invited to participate in a working session

RFI Response Scoring, Review, and Analysis

5 Vendor Candidates

Encoda	
	Myers
Pilat Media	
Sintec Media	
MediaGeniX	

Vendor Working Sessions

accenture

PBS

After the working sessions, the top five were pared down to three candidates

Vendor Working Sessions

Scenarios

Sample Data

5 Vendor Candidates

Encoda	
Pilat Media	
MediaGeniX	

RFQ Generation & Distribution

High Level Gap Analysis

RFQ Responses Submitted

accenture

27

PBS
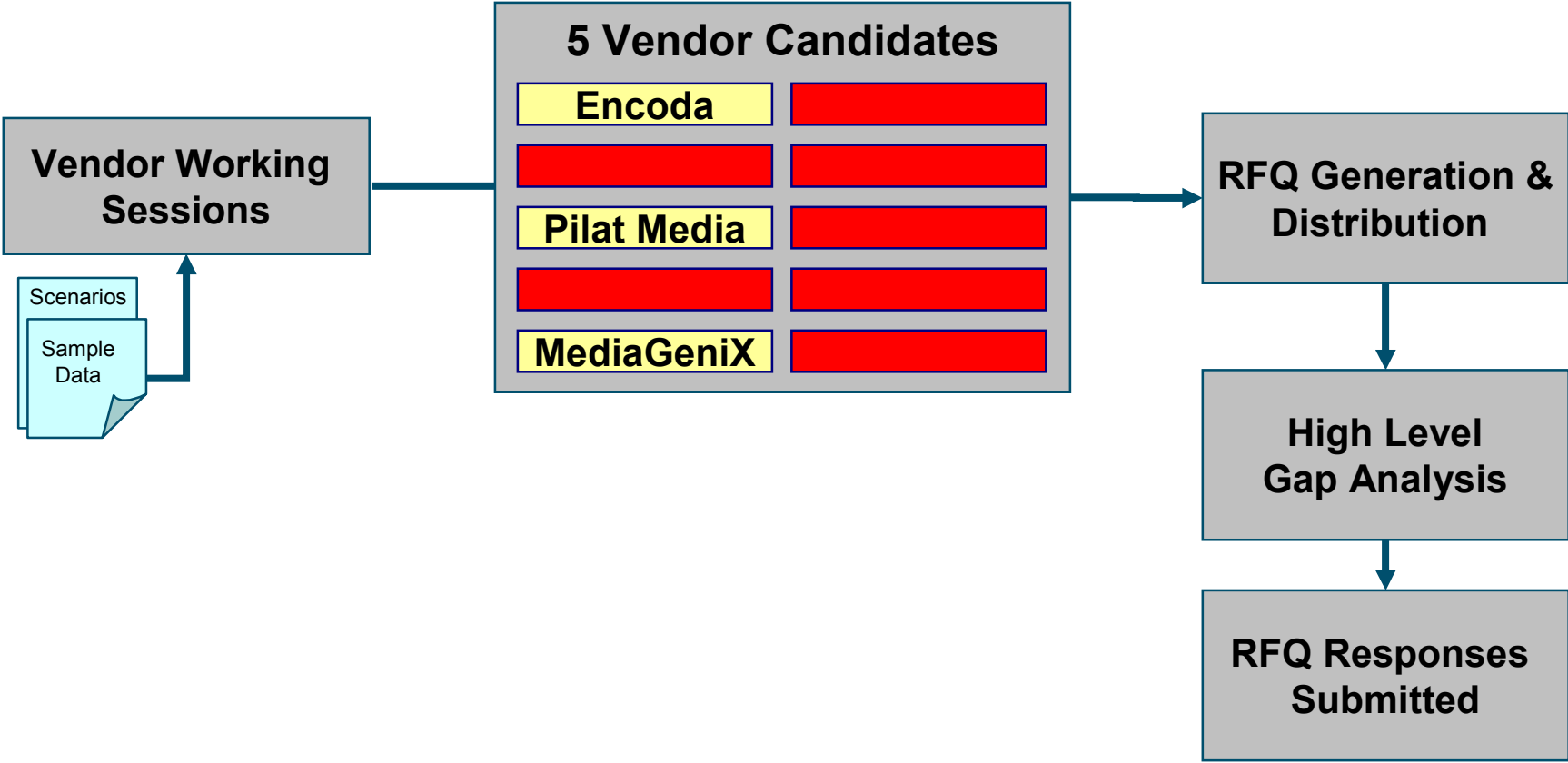
The three final candidates' RFQ responses are being evaluated to select a preferred Vendor

Encoda Systems

Founded in Q3, 2000 from the merger between Enterprise Systems and Columbine. Encoda has 1000 full time employees of which 600 are US based. Office locations are in: Denver, Colorado Springs, Memphis, NY, NJ, UK, Canada, Australia

Notable Clients of the **Vision product** are:
- Universal Studios, UK
- Turner Broadcasting Systems, Europe
- TV3, Television Network, UK
- Disney Channel, CA
- AFRTS, USA

USA Presence
- US support location
- No US development location
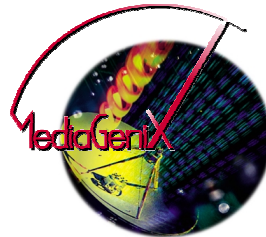
MediaGenix

Founded in 1992 as OO Partners and then formed MediaGenix after VC round in 1997. Currently has 70 employees based in two locations: Brussels, Belgium and London, UK

Notable Public Service Broadcasting Clients of the **What's On product** are:
- NRK (Norway)
- TV2 and DR (Denmark)
- WDR and BR (Germany)
- YLE (Finland)
- Kanal 5 (Sweden)
- FlexTech / Telewest (UK)

USA Presence
- No US support location
- No US development location

Pilat Media

Founded five years ago, parent company Pilat Technologies founded in 1975. Pilat Media has 100 full time employees. Office locations are: UK, Tel Aviv, USA - NJ (Year 2001)

Notable Clients of the **IBMS product** (Integrated Broadcast Management System) are:
- BSkyB, UK
- SkyLatin America
- Yes, Israel
- MTV Europe
- Fox Sports

USA Presence
- No US support location
- No US development location

DTV-ATP Project Overview

Solution Scope

Implementation Approach

Wrap Up

accenture

PBS

The Core Team has completed the scope of work for the Validation phase

The purpose of the Validation phase was to:

➢ **Validate** the original scope, issues and assumptions

➢ **Develop** Solution Scope

➢ **Revise** the cost and benefits associated with the new validated scope

➢ **Select** a qualified Vendor to help implement this scope in a timely manner

■ **Phase I - Validation**
- ✓ – Validate solution requirements
- ✓ – Identify process change opportunities
- ✓ – Select a qualified Software Vendor
- ✓ – Update the high-level business case
- ✓ – Develop go-forward Project Plan

■ **Phase II - Design**
- – Business Model Requirements
- – Refinement of Business Case
- – Create System / Application Architecture
- – Create Prototype
- – Create Change Plan
- – Create Deployment Plan

■ **Phase III - Implementation**
- – Production-Ready Development, Execution, and Operations Architectures
- – Participants and Instructor Training Guides
- – System Test Model
- – Application Built and Tested

■ **Phase IV - Deployment**
- – Application Deployed within PBS and all User Groups
- – Train Users
- – Begin Measurement of Success Metrics
- – Confirmation of Business Capability

accenture

PBS

The final task for this phase is to present the findings and final recommendation to:

■ DTV-ATP Executive Steering Committee
  – 4pm April 22, Las Vegas

■ CPB & All interested parties
  – Final report due April 30

accenture

PBS

For additional information on the project, please contact...

Michael Hunt
PBS DTV-ATP Project Manager
703.739.5052

accenture

PBS